THE MEDICAL AND SURGICAL REPORTER.

No. 1905. PHILADELPHIA, SEPTEMBER 2, 1893. Vol. LXIX—No. 10

ORIGINAL ARTICLES.

THE TREATMENT OF DIPHTHERIA.*

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The constant discovery of new remedies, the new applications of old ones and the appalling fatality of some visitations of diphtheria, even at this day of advanced medical knowledge, seems to justify the effort to cast upon it every ray of light possible, even at the risk of much repetition.

If it be claimed that the pathology, diagnosis and etiology of the disease are understood, the great diversity of systems of therapeutics offered by their various advocates, show that the best mode of treatment is far from being established, and should this priceless boon ever be granted, it must in turn reflect great additional light on the causes and pathology of diphtheria and thereby act as a prophylactic. Striving to reach this most desirable point, viz.: to determine the most successful mode of treating diphtheria, the writer would add another to the list of remedies, or rather a plan of treatment which has proved most efficacious.

Diphtheria has been described under various names from a remote period, the names being taken mainly from its visible effects. A fibrous deposit on certain mucous membranes characterizes the disease. The membrane may be merely attached to the mucous surface, or may infiltrate it and the tissues beneath. Some writers, however, claim that this difference is the proper distinction between diphtheritic and croupous deposits. They contend that when the deposit is superficial and does not infiltrate it is croupous, and when it infiltrates it is diphtheritic. The tonsils and neighboring parts are the regions mainly affected in the early stages, and as it is estimated that three-fourths of the fatal cases result from the invasion of the air passages, it should obviously be the object of the practitioner to arrest it ere it extends further. Experience proves that this arrest can be made, if treatment be begun early on the plan to be described. If not arrested, the membrane may spread to the larynx, trachea, bronchi, the nasal cavities, Eustachian tube, middle ear, the eye, involving loss of vision, the lips, or any of the outlets of the body, and in an epidemic may attack an ulcer existing on any part of the derma. The first distinctive sign, the grayish-white patch, may be preceded by slight inflammation. It may become reddish-brown and varies greatly in consistence. If the deep tissues are involved, the removal of the membrane frequently discloses ulceration. If not arrested early, the tonsils and adjacent parts become greatly enlarged. The microscope reveals bacteria, micrococci, pus cells, epithelial cells and red blood corpuscles in the fibrous membrane.

There is a difference of opinion as to the pathology of the disease. One view is that the vegetable germs find lodgment in the throat in the first instance, migrate to other parts of the body and so the disease becomes general. Another, that it is general from the beginning and that the local manifestations are secondary.

*Read before the North Carolina State Medical Society, May, 1893.

It is generally admitted to be contagious, and also to be produced by neglect of sanitary precautions. The contagion seems to be feeble in some instances, so as to lead to the denial occasionally of its being communicated in that way. Many striking instances, however, of its contagiousness, or at least of its portability, could be cited.

Now, it cannot be denied that from the pathology and symptoms, the antidote must be distinctly antiseptic and germicidal, also that it must be tonic and alterative. The disease is rapid in its course and the success of any line of treatment depends on an early application of the remedies, for if through delay it is allowed to enter the air passages, the chance of recovery is greatly lessened. Adopting this view and adapting this mode of treatment thereto, the phenominal success of it verifies its correctness and proves it to be founded on scientific principles and to be devoid of empiricism.

Before detailing the plan of treatment pursued, the outline of the history of some epidemics which came under the observation of the writer, extending back through years, will be premised.

In the autumn of 1886, an epidemic of diphtheria presented itself in a locality between Wildon and Loston, in the county of Halifax, whether through contagion or neglect of sanitary precautions did not appear. There were many fatal cases, in one instance three deaths in one family, and the attending physicians pronounced it to be of a most malignant type. The epidemic extended and entered the bounds of the writer's practice. The first case had most careful attention. The course of treatment was such as had been inculcated by reputable authors. In spite of every means it marched steadily on to a fatal termination. Before being called to another case the plan of treatment to be cited occurred to him, and in the twenty cases following there was not another death. In fact its course was nearly arrested, very few cases having occurred beyond, and these all terminated in health, the success in the twenty cases having induced the attending physician to adopt the same course. In the years next succeeding sporadic cases occurred from time to time which yielded readily to the same treatment.

In the autumn of 1892, the author was called to the case of a girl, aged about 12 years, who had been under the treatment of a practitioner for five or six days and declining steadily, till at the time I saw her, it is fair to say she was *in articulo mortis*. She died during the succeeding night. This case was followed by three others in the same family, but the early application of the remedies was so efficacious that it prevented the necessity of confining any one of them to bed. During the next week, in a family near-by where there were seven children between the ages of two and eighteen, the disease presented itself. Having been called to its treatment, and the mother being a woman of strong sense and a good nurse, the medicines were prepared, the directions given and the management of the cases was committed to her. She carried them all through safely without other medical advice. About the same time a case appeared in the person of a small boy of a neighboring family and the same course of treatment soon restored him. A neighboring physician, observing its action, adopted it and relates remarkable cases of recovery from its use.

We now come to the indications of treatment as suggested by its known attribute. It was stated above that germicides, tonics and alternatives have yielded the best results. Some years back in a prize essay by the late Dr. E. S. Gaillard, he warmly advocated a combination of muriatic acid, tincture muriate of iron and potassium chlorate, to be taken internally. This was a most fortunate conception. For this combination on the addition of water sets free much of that efficient and excellent germicide *chlorine*, and yields to the system the tonic iron so much needed in the asthenic condition of the system appertaining to this affection. It is a remedy highly approved by many and will of itself undoubtedly prove curative in some cases. But it fails in some instances. A combination of fluid extract of pinus canadensis and phenic acid, applied locally, has been much extolled. The pinus canadensis, as an application to inflamed and ulcerated surfaces, was highly commended by the late J. Marion Sims, and the writer in various affections has verified its claims as a curative. The addition to it of phenic

acid brings another powerful antiseptic to the aid of chlorine, and the septic tendency of the disease seems at once to yield to the potency of the two. Now, it occurred to the writer that if this constitutional remedy, as suggested by Gaillard, and the excellent local application of the pinus canadensis and phenic acid were used in conjunction, it would most probably arrest the rapid advance of the sepsis if applied early in the attack. The result, after long and thorough trial, verified his most sanguine hopes and in these two applications, constitutional and local, we have a remedy, a specific for diphtheria, if there is a specific for any disease. So that while the writer claims no credit as the discoverer of the disunited elements, he does claim to have first suggested, so far as he knows, the combination which seems to be the *ne plus ultra* as to the treatment of diphtheria.

The details of treatment are these: As soon as the patient is seen, and not delaying for the action of a cathartic or other medicine, begin to combat the poison at once by the administration of two tablespoonfulls every hour for adults, and proportionally less for children according to age, of the following preparations: Potassium chlorate one drachm; dilute muriatic acid two fluid drachms; tincture muriate of iron two fluid drachms; water twelve fluid ounces. Diminish to one or two doses at night, with tonic doses of quinine, three times a day. The above compound is not objected to much by children. Immediately after its administration, proceed to mop the throat, after depressing the tongue, with a mixture of fluid extract of pinus canadensis one fluid ounce, and phenic acid gtt. 10 to 15. The mopping is repeated after each dose of the solution. The mop may be made of a small twig with a little lint bound to the end. This simple implement is given instead of a more artistic one because so easily obtained. The mopping should be done so as not to wound the tender mucous membrane. Petroleum, applied externally to the throat, is advisable.

Under this treatment improvement begins at once. The fibrous matter ceases to accumulate. That which has already appeared turns black, being stained by the red pinus, contracts around the edges and in a few days drops off and amelioration of all the symptoms becomes obvious. Unlike the plan of treatment proposed by Dr. Martindale, of New York, at your last meeting, this course of treatment does not require an air tight room so difficult of attainment in many localities, or an oil stove quite as much so, but may be applied easily and speedily anywhere.

CLINICAL LECTURES.

MERCURIAL PTYALISM; HEPATIC ABSCESS.

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The first patient whom I present to you this morning illustrates the condition of ptyalism, which is usually produced by the administration of one of the purer forms of mercury. The patient states that for two weeks before coming into the hospital, he had been rubbing a mercurial ointment into his arm. Just how much he has used we do not know, except that it was a boxful. It is not important, however, to know either the weight of the ointment or its strength, for the amount absorbed depends largely upon the faithfulness of the patient in carrying out the instructions to rub the ointment well into the skin, and upon the activity of the skin circulation, the thickness of the cuticle and other more obscure conditions. Again, there is a great difference in the susceptibility of different patients to the action of mercury. Ptyalism has been produced by a single vaginal irrigation.

When the patient entered the hospital, his tongue and lips were swollen, the cavity of the mouth could hardly be distinguished, the gums were tumid, softened

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and ulcerating, while the teeth and tongue were covered with sordies so that the breath was extremely offensive. The tongue is still covered with a creamy exudate, with the suggestion of ulcers at the side. Those of you who are near the patient can also notice the odor of mercurial stomatitis. One of the earliest symptoms of mercurialism is a sense of sticking together of the teeth. You must warn your patients who are taking mercury to be on their guard against this development. Direct them to strike the teeth together occasionally. As long as they meet firmly and without sensitiveness, the mercury is not being given in excess. If, however, the teeth seem to the patient to meet as if there were glue between them, or if they seem too long, as if forced from their sockets, the medicine must be discontinued, or, if it is a case of urgency, continued with caution. At this time fetor begins to be apparent. If the drug is pushed, the gums become inflamed and spongy, they bleed easily and the fetor becomes intense. With the gingivitis—inflammation of the gums—there is a glossitis and the tongue finally becomes so much swollen that the patient can hardly speak. Saliva is secreted in large quantities, particularly during sleep and the driveling often saturates the pillow. It is this symptom that gives the name ptyalism or salivation to mercurial poisoning which most frequently manifests itself as a stomatitis.

Patients are apt not to return for further treatment until their medicine is taken or their ointment is used up. I saw one case in which a patient neglected to report for observation till tremors had set in, indicating an involvement of nerve centers, and until the stomatitis had progressed so far that half the jaw-bone became necrotic and came away. Other things being equal, young persons will stand a great deal more mercury than older ones. Syphilis, on account of which mercury is is most frequently given, usually affords a tolerance of the drug, but this is not always the case, and the only safe plan is to watch each person to whom mercury is administered as if he were particularly susceptible to its effects.

One of the first remedies to be dispensed to a patient with ptyalism is a tooth-brush, a soft one, for the parts are exquisitely tender. An immense amount of offensive creamy exudate, which is itself irritating, will be found about the teeth. It is well to use a mild astringent and antiseptic wash for the mouth. Myrrh is commonly used. It is agreeable in odor and taste and it is moderately antiseptic and astringent. Advice should of course be given to discontinue the mercurial. Paradoxical as it may seem, there is a tendency to treat these cases with solutions of bichloride of mercury (1: 10,000) which are antiseptic and feebly astringent and which do not introduce an appreciable amount of mercury into the system. Personally I am not particularly impressed in favor of this treatment. In old times, when mercury was given more frequently and more lavishly than at present and when severe cases of ptyalism were much more common, potassium chlorate was used as a wash with good success, and I believe that the antiseptic element is important in the treatment.

Later on, in the period which this young man has reached, it is advisable to administer potassium iodide to remove the mercury from the system as a soluble double salt of potassium and mercury. This salt is eliminated largely in the saliva, so that if the iodide treatment were begun too early there would be an aggravation of the stomatitis. It sometimes happens that syphilitic patients show no indications of mercurialism under mercurial treatment but suddenly develop a stomatitis when iodide of potassium is commenced. Time is a great factor in the treatment of ptyalism. In another patient, who is still in the hospital, ptyalism appeared while mercury was being administered in double doses, internally and by inunction. He, however, had active manifestations of syphilis in the form of mucous patches and a mascular eruption—and I did not consider it advisable or necessary to interrupt the antisyphilitic treatment, more especially as the stomatitis was not severe. Accordingly he continued to receive the red iodide of mercury in doses of two milligrams, or one-thirtieth of a grain. A week or two of discontinuance from mecury will usually allow ptyalism to subside unless it has reached a high grade of inflammation. In the present instance I am not at all sure that there is syphilis to treat and, accordingly, the patient will be carefully observed after

the mouth symptoms have subsided, before returning to mercurials.

The next patient is a Swede, aged 33, married, and a tanner by occupation. He was admitted two weeks ago with this history. "Parents living and healthy, one brother healthy. Patient came to this country ten years ago. Has always been considered well till three weeks ago when he was taken with a chill followed by fever and a steady severe pain two inches above the umbilicus and to the right. Bowels constipated; feces whitish; appetite poor. On admission, tongue coated white with red streak in middle. Pulse 90, temperature 97°." The pain was not constant, but would come in paroxysms during which the man would writhe in bed though his courage kept him from crying out. Examination of the abdomen revealed little or nothing except that some one had punctured him at about the seat of the pain. Before he had been in the hospital twenty-four hours, he had a severe chill which shook the bed. His pulse went up to 130 immediately; the temperature was not taken because he could not keep still. On the next day he had another chill in which the pulse rose to 160 and then became imperceptible, while we succeeded in taking the temperature which was 104°. The patient threatened to die in collapse but he was revived by diffusible stimulants. We were on our metal to do all that was possible for him as he had told us that he had gone on for some time without relief and had come to us from Port Alleghany to be cured. On reëxamining him I determined that there was a slight bulging in the right epigastrium and hypochondrium. Upon percussion, his liver seemed enlarged and posteriorily I could detect quite a degree of tenderness. Pressure in front also elicited some complaint of pain. At this examination—which was made at eleven o'clock at night—the diagnosis of abscess of the liver was reached. The introduction of an aspirator needle suggested itself, but I reflected that if I made a puncture and struck pus, I was not prepared to operate and the withdrawal of the needle would infect healthy tissues. Even if the peritoneal surfaces had become agglutinated so that a septic peritonitis would not be set up, the wound of exit would be converted into a sinus. We waited accordingly till the next morning when I asked Dr. Park to make the exploratory puncture, indicating to him the point at which pus was expected, and requesting him to be ready to follow the puncture with a rapid evacuation of the abscess.

The patient was etherized and pus was found to a depth of 2½ inches. It had the usual characteristic odor of pus from the vicinity of the intestine—such as is observed in ischio-rectal phlegmon. Once smelled, this odor is not forgotten. Some claim that the odor is due to the amœba coli. In cutting down on the liver it was found that the peritoneum had not become involved, that the liver was sliding up and down in front of the orifice with every respiration. In order to prevent infection of the peritoneum, the opening was made very large and iodoform gauze pushed into the aperture so as to make an antiseptic ring about the site of the intended puncture of the liver. Three or four pus-basins were filled with the contents of the abscess which was not like the usual discharge. This pus was gelatinous and transparent, whereas the pus of hepatic abscess is usually like tomato catsup, reddened with blood and darkened with disintegrated liver cells.

Relatively speaking, hepatic abscess is rare in this section of the world. In India, Mexico and other hot climates it is not uncommon, being due to the absorption of infectious material from the intestine. The starting point of the infection is a colitis, a dysentery without the ordinary conspicuous evidence of inflammation of the colon, being due to the amœba coli which does not cause the pain and the discharge of mucous and blood such as occur in other dysenteries. The resulting abscesses in the liver are usually large and single. Multiple hepatic abscesses usually develop in the course of pyæmia from infectious emboli. Sometimes traumatism is a cause of hepatic abscess. Not long ago I had a case occurring in a railroad man who was caught between two bumpers. The ulceration about gall-stones is another source of hepatic abscess. Rarely, there is absorption of septic matter from typhoid ulcers in the ilium or from typhlitic suppuration.

In the present case, I am rather inclined to think that the cause was a gall-stone, largely because no other cause can

be found. The favorable course of the case precludes the idea of pyæmia, the amœbæ have not been found and if the abscess were due to them we should expect a fatal termination. There is nothing in the history to point to typhoid fever inflammation about the cæcum or todirect injury to the liver. Gall-stones often exist through life without making their presence known till they are discovered at the autopsy. When, however, they serve as the exciting cause of a hepatic abscess, we expect some jaundice due to the plugging of a bile channel, whether the calculus is in the liver or in the gall-bladder or in the larger ducts. This symptom has been lacking in the present case.

Commonly, patients with hepatic abcess die; this man bids fair to be a favorable exception. The prognosis in pyaemic abscess is almost utterly hopeless. Even in the case of single abscesses, the cachexia produced by the septic absorption before the disease is recognized, commonly pulls the patient down so far as to preclude recovery. There was a group of symptoms in this case which at first made me hopeful that the trouble was less serious than it proved to be and which I wish to emphasize because it has often led to an erroneous diagnosis and postponed surgical treatment. The chill and fever occuring daily, the enlargement of the spleen and of the liver suggested malaria. But, when at the expiration of two days the condition was not relieved by the vigorous use of Warburgh's tincture, I waited no longer before urging Dr. Park to operate. The enlargment of the liver in these cases, which mimics intermittent or remittent fever, is due to a circumscribed collection of pus; the spleen is enlarged on account of the obstruction to the portal circulation in the liver; the chills and fever are due to the absorption of ptomaines. Too often, however, the differential diagnosis is not made till the autopsy is performed.

Aside from symptomatic and supporting medication, the treatment of hepatic abscess consists in operation. Even this in the case of pyaemic abscesses offers no hope, but in single abscesses an exploratory puncture should be made early and the abscess opened and drained if found. It is unwise to make an exploratory puncture unless the operation can be performed immediately, if necessary. I would, therefore, suggest that uniformly, the patient should be etherized and the instruments and dressings needed for the operation be laid out before the puncture, is made.

This patient was operated upon on the third day after admission to the hospital. It is now eleven days since the operation; he is still doing well and his recovery is confidently expected.

COMMUNICATIONS.

ON THE INCREASING PREVALENCE OF SCABIES.

HENRY W. STELWAGON, M. D., PHILADELPHIA.

Under the same title, Dr. James C. White, several years ago called the attention of the profession to the increasing frequency of this disease, especially with reference to his own city, Boston.[1] This same tendency had been observed by me for the several years previously in Philadelphia, and had, indeed, been so striking that, at that very time, a great part of the data here presented was prepared for pub lication. Since then the proportion has kept its high place, and has, upon the whole, with slight fluctuation, been steadily growing, so that, at the present time, in the dispensary practice of this city, this disease constitutes ten to fifteen per cent. of all skin cases. The following table (Table I) summarizes my own observations at the various services for skin diseases with which I am or have been connected.

*Read before the Pennsylvania State Medical Society, 1893.

1The Boston *Medical and Surgical Journal*, February 14, 1889.

Table I. Showing the Increasing Prevalence of Scabies in Philadelphia.

		1880	1881	1882	1883	1884	1885	1886	1887	1888	1889	1890	1891	1892
Phila. Disp. for Skin Diseases.	No. patients.	217	308	331	279	239	388	277	433	642	688	451		
	Scabies.	8	5	9	3	11	14	20	48	100	66	52		
	Percentage.	3.69	1.62	2.72	1.07	4.0	3.61	7.22	11.09	15.58	9.59	11.53		
Northern Disp. Skin Service	No. patients.	440	464	460	538	405							485	500
	Scabies.	3	10	13	16	16							64	61
	Percentage.	0.68	2.15	2.83	2 97	3.95							12.93	12.2
University Hosp. Skin Disp.	No. patients.					448	402	396	515	433	435			
	Scabies.					3	13	13	24	38	28			
	Percentage.					0.67	3.23	3.3	4.66	8.77	6.44			
Philada. Hospital Skin Ward.	No. patients.								77	110	103	180	163	152
	Scabies.								9	18	15	11	11	12
	Percentage								11.7	16.36	14.56	6.11	6.75	7.89
Howard Hospital Skin Disp.	No. patients.									241	182	213	295	149
	Scabies.									12	29	6	39	18
	Percentage.									4.98	15.93	2.82	13.22	12.08
Jefferson Hospital Skin Disp.	No. patients.											438	841	538
	Scabies.											37	146	90
	Percentage.											8 45	17.36	16.73
Totals.....	No. patients.	657	772	791	817	1092	790	673	1025	1426	1408	1282	1794	1339
	Scabies.	11	15	22	19	30	27	33	81	168	138	106	260	181
	Percentage.	1.67	1.94	2.78	2.32	2.75	3.42	4.9	7.9	11.77	9.8	8.27	14.49	13.52

It will be clearly seen by a glance at this table that the itch is becoming a common disease among the poor, and that it is not limited to particular parts of the city, although it is, it is true, much more common at those centers toward which the foreign population trend. For example, the Northern Dispensary and the Jefferson College Hospital show the largest proportions, the former being close to the German population and the latter near the Italian and Russian Quarters. Moreover, it is not to be inferred that the percentages here given, although large, really represent the actual prevalence of the disease, for it is much more common than here noted—it is the custom in connection with dispensary services to record only such cases as personally present themselves, whereas, often enough, the patient is but one of a whole family affected.

Nor is this increase limited to one or two sections of our country, but it is widespread; naturally it is more frequently seen in our eastern seaport cities. This general prevalence is shown in the next table (Table II), made up from the returns of the various members of the American Dermatological Association as published in its Transactions:

Table II.* Showing the Increasing Prevalence of Scabies in Boston, New York, Baltimore, Chicago and St. Louis.

		1880	1 881	1882	1883	1884	1885	1886	1887	1888	1889	1890	1891
Boston.....	No. patients.	3315	3264	3212	3190	3228	4054	4401	4515	4782	3460	3012	5310
	Scabies.	29	22	67	96	179	224	334	374	494	368	254	392
	Percentage.	0.87	0.67	2.08	3.01	5.54	5.52	7.59	8.28	10.33	10.63	8.43	7.38
New York.....	No. patients.	3326	3837	3231	6684	2737	3596	5692		2439	8055	914	487
	Scabies.	35	64	76	132	52	36	178		151	282	87	31
	Percentage.	1.05	1'66	2.35	1.97	1.89	1.	3.12		6.19	3.5	9.52	6 36
Baltimore.....	No. patients.	663	503	520	623		1132	673	1075	489			2405
	Scabies.	9	6	6	2		8	8	24	24			111
	Percentage.	1.35	1.19	1.15	0.32		0.7	1.19	2.23	4 9			4.61
Chicago.....	No. patients.	2587	2100	2564	3167	2414	2675	2546	2010	2979	2741	1832	2744
	Scabies.	14	31	22	72	56	56	34	72	59	80	48	97
	Percentage.	0.54	1.47	0.85	2.27	2.32	2.09	1.33	3.58	1.98	2.92	2.62	3.53
St. Louis.....	No. patients.	260	264	224	450	555	888		1009	1075	1026		1628
	Scabies.			1	7	13	74		36	27	28		47
	Percentage.			0.24	1.55	2.34	8.33		3.56	2.51	2 72		2.88
Totals.....	No. patients.	11047	11076	11402	15490	8934	14007	14666	10366	14253	17544	6784	12574
	Scabies.	100	134	202	334	300	442	632	643	965	960	426	678
	Percentage.	0.9	1.21	1.77	2.15	3.36	3 15	4.31	6.2	6.76	5 53	6.57	5.39

* Includes both dispensary and private cases.

When a disease of the character of scabies becomes so common among the poor, it may be certain that sooner or later it will, through many obvious channels, find its way among the better classes; and this is, indeed, already the fact. It was not until six or seven years ago that I saw a case in private practice, and then only one or two cases a year, whereas, now, an observation of ten to twenty cases is not unusual. This, I feel certain, is also the experience of my colleagues in Philadelphia and in other parts of the United States, as indeed the following table (Table III) compiled from the Transactions of the American Dermatological Association will show:

Table III.* Showing the Increasing Prevalence of Scabies in Private Practice throughout the United States.

	1880	1881	1882	1883	1884	1885	1886	1887
No. Patients.	2848	2641	3554	3656	2931	3737	2481	2849
Scabies.	15	7	26	34	33	49	56	62
Percentage	0.52	0.26	0.73	0 93	1.12	1.31	2.25	2.17

In seeking for causes for this increasing frequency, several of the more potential factors, which, according to my observation, are to a great extent responsible, should be referred to. Of first importance is the character of recent immigration. It is common knowledge that the average of the present immigrant is far lower in cleanliness, etc., than obtained some years ago, and this extremely undesirable class, largely made up of Russians, Poles, Huns and Italians, have, especially for the past eight or ten years, been arriving here in great numbers. Judging by dispensary observation it would seem that the itch is the normal state in the steerage of to-day, and many of those even who are free from the disease when embarking, are fairly certain to acquire it on their way over. These cases arriving in our midst are so many additional foci for its spread.

Another factor in its increase and not an unimportant one, is the "day nursery." An affected child is placed here for the day; it comes closely in contact with its comrades, and before its short sojourn is over, several more cases have had their origin and are themselves carriers for the further spread of the disease. The children's "home" and "asylum" are likewise often responsible, for it is not unusual to find that the invasion of a whole family may be traced to the return home of a child temporarily placed in such an institution. These statements are not made at random, but are based upon repeated observations. The cheap lodging houses are also fruitful centers of contagion; many of the Philadelphia (charity) Hospital cases have their origin in such places.

Another element in its increase, especially among the better classes, is to be found in the growing tendency to travel, and the rapid multiplication of traveling salesmen and drummers. With ordinary and proper precautions on the part of hotels this factor should sink into insignificance, but it is extremely doubtful if the linen in the average hotel is always changed or changed in its entirety after a single night's occupation, and yet, if not, and had an affected person slept therein, the next occupant will almost assuredly contract the disease. I mention this method of spread for the reason that in a large proportion of private patients whom I have treated for scabies, the disease could be distinctly traced to such a source; nor were the cheaper hotels alone culpable. Finally the failure on the part of physicians to recognize the disease, especially when ill-developed or in its beginning stages, must be looked upon as an important element in explaining its increasing prevalence. This is not said to reflect upon the profession, for it is the result of lack of opportunities. Graduates of the present day, if they make use of their advantages, are pretty well schooled in the recognition of this disease. As it is now a common one at the clinic; but some years ago, during my own student days in fact, the presentation of a scabies case was rare.

There are several points regarding the eruption which if kept in mind, will serve to prevent error in diagnosis—distribution, itchiness, multiformity, the presence of burrows (cuniculi) and the linear character of many of the lesions; inquiry will, moreover, in a majority of the cases, disclose the existence of the disease in a bedfellow, comrade, or in others of the family. The burrow, which is pathognomonic, is not always present. Special stress, in my opinion, should be laid upon the distribu-

* After 1887, the private and dispensary cases were merged in the returns. Since that date, private cases have, according to my own experience and that of others, increased almost as rapidly, unfortunately, as have dispensary cases.

tion and the linear character of the lesions as diagnostic symptoms of great value and invariably present. Some or many of the lesions are always found to be longer than they are broad, appearing as elongated or oblong papulles, vesicles and pustules; scattered lesions of this kind, especially when seen about the fingers and hands, wrists, axillary folds, shaft of the penis, and anal region, even though few in number, should always excite suspicion. As a rule, private cases are most difficult to recognize, inasmuch as such persons are usually extremely solicitous about any skin irritation, take daily baths, use soap and water freely, so that the disease is measureably held in check and the eruption remains scanty. It is not rare in some of the private cases to find but two or three lesions upon the fingers or other parts of the hand, possibly a few on the wrists, one or several on the penis with here and there an excoriated papule or a scratch mark over the lower trunk. Even in private cases the anal region is a common site for several or more lesions.

The treatment is well-known. It is as simple as it is efficacious, and every case thoroughly and quickly cured frees the community of a moving and active contagion. In the average case of the dispensary class, I have usually prescribed a compound ointment, consisting of an ounce of sublimed sulphur, an ounce of Peruvian balsam, thirty to sixty grains of beta-naphthol, and sufficient benzoated lard or petroleum ointment to make up four ounces. The patient is directed to take a soap and hot water bath; ordinarily any good toilet soap will answer, but in those of sluggish, thick skin, or of filthy habit, a good sulphur soap or sapo viridis is preferable. After the bath the ointment is to be energetically rubbed in over the whole surface from the chin down, special attention given to the parts most affected. The back should not be neglected, the application to this part being preferably made by another person. Clean linen is put on and clean bed linen used—the soiled linen is to be boiled. At the end of ten or twelve hours another application of the ointment is made, and so on for six applications. During this time the same linen is worn. Some hours or a half day after the last application, another bath is taken and a complete change of linen made. The linen which had been worn, as, in fact, all the underwear and bed-linen before being used again, should be thoroughly boiled. By boiling, all stray parasites and their ova are destroyed.

During the treatment it is advisable to have a dusting powder of sulphur sprinkled in the bed, in the bureau drawers, and in other suspicious places. All outer clothing should be subjected to high temperature if possible, or thoroughly beaten and hung out in the air and sun. Other members of the family should undergo inspection, those affected should be treated as above, and those doubtful advised to make two or three thorough applications. It is only in this manner that the disease is cured and recurrence prevented. In young children and infants the beta-naphthol is omitted in the above ointment and the quantity of sulphur reduced one-half. In these younger cases, particularly infants, the disease often invades both face and scalp also, especially the lower part of the former, and this fact should not be forgotten in the treatment. In private practice I have commonly prescribed the same ointment, with beta-naphthol omitted; in some cases also an ointment of equal parts of styrax and lard; two to four applications will usually suffice in these patients.

To control the cutaneous irritation which is not infrequently set up by the disease or by the sulphur applications and which sometimes persists for several days or longer after active treatment has been discontinued, it is well to advise the application, two or three times daily, of a saturated solution of boric acid containing one to three drachms of carbolic acid, two drachms of glycerin and four drachms of alcohol to the pint. Should the treatment have been inefficiently or carelessly carried out, as not infrequently happens in dispensary practice, evidences of an active return of the disease will soon appear, and a repetition of the plan described above, somewhat abbreviated, will be found necessary.

As to controlling the spread of the disease in the broad sense of the term, and placing it again low down among the comparatively rare skin diseases, I am convinced much can be done. The recognition and prompt cure of each case as soon as it is presented, as already remarked, is a step in the right direction; patients should be cautioned as to the contagious

nature of the disease. Moreover, there is absolutely no reason why an immigrant with the itch should be allowed to land; the disease may be rapidly cured when circumstances demand it by employing much more energetic measures than those already mentioned, but which need not be outlined here. Such an immigrant may be rendered entirely harmless in an hour or so by vigorous treatment, during which time his clothing and effects could be baked, steamed, or sulphur-fumigated. Energetic treatment of this kind, it is true, leaves the skin in a state of active irritation, but this, with several days' use of a mild soothing ointment, will subside. Infants and young children should be carefully inspected before being admitted to "day nurseries," "asylums" or "homes," and if found with any evidence of skin disease, should be rejected till a professional assurance of its harmless character is obtained; the same rule should be applied in the admission of children to the public schools. Hotels, small, or large, should be legally required to make a complete change of bed-linen before the bed is assigned to another occupant—to say nothing of why this should be done for many other reasons. Lodging-houses, to which cases may be clearly traced, should be reported to the Health Board for investigation and for the institution of proper measures for disinfection.

It is, I know, a common thing to speak of the itch with more or less humor, as a joke, but it is an exceedingly unpleasant experience for the immediate victim, his family, and the community at large. A disease so readily cured, so readily controlled, and so readily preventable as this, has no reason for its existence in our midst, certainly not to such a great extent as it exists at the present day.

ABDOMINAL SURGERY BY UNTRAINED OPERATORS, WITH DEFICIENT APPLIANCES.

J. McFADDEN GASTON, M. D., Atlanta Ga.

The discussion going on recently in regard to the recognition of emergency work in surgery indicates that while the higher types of operative procedures should always have precedence, there is a place for that class of measures called for at times by the necessities of the case. Of course, no one unqualified for surgical work or without the means of executing it properly, should undertake the management of a case when a surgeon of experience can be secured to do it. But the question is raised, whether in the absence of an expert operator, any member of the profession who is called to see a patient suffering from recent traumatism should feel authorized to meet this exigency with promptness by a life-saving operation when delay would prove fatal. If it were a case of hemorrhage from the division of an artery, though temporary compression would arrest the bleeding for the time, it could not avail for permanent relief, and ligation of the vessel should be resorted to even by the most inexperienced practitioner, without the ordinary appliances for such an operation.

But the class of cases which has elicited this discussion is of a different nature, and there may be degrees of urgency, in all of which interference is not imperative, and in regard to which it is questionable whether an untrained operator would be warranted in proceeding. This issue is made now especially in regard to penetrating wounds of the abdomen and thorax. Should there be a protrusion of the abdominal viscera from an incised wound of the parietes, and it was found that the coats of the intestine were cut or that a mesenterie artery was divided, it is evident that there should be no hesitation on the part of the medical practitioner, least qualified for surgical work, about proceeding to suture the opening and ligate the vessel, without waiting for a specialist. But in the event of perforation without protrusion, a grave question arises in the diagnosis and scarcely less grave in the results of cases left alone, are those which have undergone laparotomy. It is not generally taken into account that the facts as recorded, show a larger mortality from the cases of abdominal injury which have

been operated upon, than from those treated without operation. I drew attention to this matter in the discussion of Dr. Link's paper before the surgical section of the American Medical Association at Milwaukee, and the inferences may be drawn, that if the percentage of mortality has been increased by laparotomy in the hands of skilful operators, we should not expect better results from unskillful use of the knife and the needle. It would seem, therefore, unwise to encourage the laying open of the abdomen by medical men without surgical experience in this class of cases. It is preferable to leave a patient with an abdominal injury, that may or may not suffer from a visceral lesion, to be treated without operation, to having an operation performed without all due precaution in the steps taken from beginning to end. The great practical deduction to be made from a consideration of this subject is that abdominal surgery should receive the most careful attention of those who expect to undertake the treatment of visceral injuries, and in view of the mortality which has attended laparotomy in this class of cases, it is not expedient that those without skill and experience should be encouraged to open the abdomen.

CLINICAL ASPECTS OF PNEUMONIA IN CHILDREN.*

HENRY E. TULEY, M. D., Louisville, Ky.†

Clinically and pathologically, we divide pneumonia into a fibrinous, croupous or lobar type, and a catarrhal, lobular or broncho-pneumonia. There is also an interstitial variety which is rarely seen and upon which I shall not dwell.

I use the terms "lobar" and "broncho" when speaking of the divisions, as they to my mind more clearly define the condition present.

Oftentimes, clinically, one is unable to differentiate these forms, and even macroscopically at the autopsy, we are unable to distinguish a broncho-pneumonia from a generalized croupous pneumonia; so it remains for them to be classified for us by the pathologist.

The differences pathologically I will not mention, but will endeavor to point out wherein a diagnosis may be made from a clinical standpoint alone.

Lobar Pneumonia: This form is generally primary; its onset sudden, ushered in by a chill or a slight chilliness, perhaps by a convulsion or convulsive twitchings; there is generally languor, headache, and an initial temperature above 101°; there may be vomiting with or without diarrhœa.

The appearance of the child is suggestive; there is pallor, an anxious, pinched expression, the face drawn, the alæ nase active, the respiration hurried.

Frequently its onset resembles very much that of scarlatina, but upon the non-appearance of the rash, pneumonia should be suspected and a careful examination of the lungs be made.

As to the method of examination; care should be taken not to expose the little patient more than is absolutely necessary. It should lie either upon the lap or shoulder of mother or attendant, the endeavor being made to distract attention from the minutæ of the preparations. It is my opinion that a thorough auscultatory examination of the chest cannot be made without the aid of the stethoscope. With it we are able to localize a small area of pneumonia. We can auscultate high up in the axilla or in the clavicular regions—favorite sites for consolidations—which in a thin or emaciated infant would be impossible with the ear alone. I use the binaural stethoscope with the concealed spring by which the pressure in the ears can be regulated and will remain constant—an end which we are unable to accomplish with the rubber band generally used.

Physical signs: These may be present at the initial examination, but they are oftentimes delayed until the third or fourth day, and indeed there may never be present the typical signs of a consolidation.

Upon auscultation, if seen early and signs are not delayed, we may expect to find at first evidences of a more or less consolidated lung, distant or weak vesicu-

* Read before the Falls City Medical Society, July 13th, 1893; and by title before the Mitchell District Medical Society.

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lar breathing, or if the consolidation is near the surface pure bronchial breathing more or less distinct. Care should be taken not to mistake the exaggerated compensatory breathing heard over the opposite lung or normal part of the affected lung, for bronchial breathing which it oftentimes simulates very closely. Pleuritic friction sounds or loose mucous râles are heard over the affected area; the former "we may expect to find when there is a large area of consolidation present." *

The *Pneumonic sigh,* which is present in the large majority of cases caused by the short sharp expiration, is a valuable aid oftentimes in eliciting broncophony, or the increased voice sounds, over the consolidated area.

By the child's crying we gain the same ends, and by palpation often, through the thin chest walls obtain vocal fremitus.

Percussion is the least reliable means of diagnosis. There may be marked dullness approaching flatness, slight dullness, or merely a slight modification of the normal pulmonary resonance, or as is most often the case, no change at all perceptable in the percussion note over the consolidated area from that obtained over normal pulmonary tissue.

This fact may be caused by the area of consolidation being superficial, normal resonance being transmitted from sound tissue beneath, or a (perverted) sound may be produced by a distended stomach pressing upon and displacing the lungs.

When dullness or modified pulmonary resonance are present, they are valuable aids in the diagnosis.

The character of the sputum is of no assistance in making a diagnosis as it is rarely seen in a child, being swallowed as soon as dislodged.

The *temperature*: As before mentioned this usually at the onset is above 101°—often 104° or 105°—its course is varied. It may be continuously high, irregular or remittent; in the latter form normal is rarely reached. Most frequently the temperature in lobar pneumonia ends by crisis, especially is this so in children over three years of age; and the most critical days are between the sixth and the eighth, the temperature at this time may fall to an unusually low point, so much as 8° or 10°, frequently reaching 94° or 95°.

A post-crisis rise often occurs, the temperature rising a degree or two following the crisis, reaching normal the next day. If this rise is prolonged we may suspect a complication, either the extension of the process into new areas of the lung or a pleurisy or an empyema.

Broncho-pneumonia: In the majority of cases this form of pneumonia is secondary to a bronchitis, or occurs co-incidently with, or as a sequela to, the exanthemata —or to pertussis or other wasting diseases.

If bronchitis precèdes an attack we have an aggravation of the symptoms present. Respiration becomes more hurried, dyspnœa often marked, the temperature rises as a rule; in short the symptoms already present are exaggerated. There may be present bronchial breathing, but it is more frequently absent, our diagnosis being largely made up then "from the severity of all the general symptoms, cough, prostration, restlessness, dyspnœa, and cyanosis.*

The temperature in broncho-pneumonia is variable, no typical course being followed. In the majority of cases it is high and remittent, in others it is 103° or below, but it is not infrequent that we have a temperature running below 101°, sometimes even subnormal; the latter occurring more frequently in children who are delicate than among those of robust condition.

There is generally an evening exacerbation but it is not unusual to meet with the opposite condition, a higher morning temperature, lasting for several days. The subsidence of the temperature in this variety is by lysis. The duration very varied, cases being reported where it has lasted fifty-one days.

As to physical signs—the absence of both dullness and bronchial breathing does not by any means preclude the presence of pneumonia, for the patches of consolidation may be so disseminated with normal pulmonary tissue intermixed, as to cause no deviation from the normal pulmonary resonance or change in the respiratory note, except perhaps a slight weakening of the latter. The presence and the character of the râles and particularly their location is of importance. Finding a localized area of râles either on one or

* Holt Archives Pediatrics.

*Holt.

both sides should cause pneumonia to be suspected, especially if over one or both lower lobes behind.

Complications: In both forms of pneumonia the appearance of a complication is serious. Pleurisy more or less severe is generally present with pneumonia, but an extensive inflammation of the pleura with or without exudation or an empyema either of which may be associated with pneumonia, greatly retard convalescence and resolution.

A co-incident inflammation of other organs may occur—of the kidney or pericardium; jaundice is often seen and diphtheria may develop. Meningitis is frequently met with as a complication principally in the lobar type, but I think it a mistake as is the wont of some authors to give to the location of the consolidation a causal relation to the meningitis. It has been said that when the apex is involved, meningitis, convulsions and other nervous symptoms are particularly liable to occur, but my post-mortem experience has shown them to have occurred with as great frequency when the consolidation was located elsewhere.

A chronic pneumonia, or caseation may be the result of a broncho-pneumonia and enlarged, suppurating and caseous bronchial glands are often found following this variety.

The *prognosis* in uncomplicated cases of lobar pneumonia is good, the mortality being only about 2 per cent.; that of broncho pneumonia has been variously stated. Holt gives it in 161 cases at 64 per cent.

The *diagnosis* in most cases is not difficult, though there are cases of bronchopneumonia which simulate very much the lobar type, and which from first to last are open to doubt. The sudden onset of the lobar variety, not following any other disease, the rapid development and clear limitation of the pathognomonic signs, the crisis in the temperature, and the rapid resolution decide us in this type. Contrast the slow development of a broncho-pneumonia, perhaps following a bronchitis, or occurring during a summer diarrhœa, the irregular temperature and its slow fall, the ill-defined signs and delayed resolutions.

In conclusion a word in regard to the improper use of the term "capillary bronchitis" so prevalent among medical writers and statisticians. It is impossible for an inflammation of the bronchi to occur in an infant without the morbid process extending to and involving the surrounding structures, and I believe that such are all clinically and pathologically cases of broncho-pneumonia and not "capillary bronchitis."

WHOOPING-COUGH IN AN INFANT EIGHTEEN DAYS OLD.

JOHN M. CURRIER, Newport, Vermont.

On the 25th of June, 1893, I was called to see a child, eighteen days old, said to be suffering from whooping-cough. I found a family of seven children, three of whom were coughing characteristically with whooping-cough. Two had been coughing for about three weeks, and one other, I afterwards learned, came down in a few days. The babe I was called to see, was having paroxysms of strangling or coughing, at intervals of three or four hours, accompanied by asphyxia. Between these paroxysms the child lay comatose, without inclination to nurse, and when an attempt to feed it was made a paroxysm of choking would occur, accompanied with cough. These symptoms had been increasing for three or four days. My prognosis was unfavorable. The child died the following day in a paroxysm. There were unmistakable symptoms of the disease for fully one week previous to its death.

Did the mother receive the poison in her system before the birth of the child, and communicate the disease through the blood to the fœtus? Some of the older children had had the disease years previously, but were now coughing, undoubtedly from inhalation of the atmosphere contaminated by those having the disease. The mother had some slight persistent cough similar to the others, but without the whooping. This case was the youngest subject I ever saw affected with the disease; but there was not the slightest doubt about the character of the trouble.

A TREATMENT FOR FISTULA IN ANO WITHOUT A CUTTING OPERATION.*

T. J. BENNETT, M. D., AUSITN, TEXAS.

At the San Antonio meeting of the Texas State Medical Association, held in April, 1889, I presented to that body a short paper with the above title, in which I endeavored to explain a very simple procedure for the relief of fistula in ano, basing the claim for the treatment upon the report of five or six well selected successful cases.

The operation consists in first thoroughly cleansing the lower bowel and the fistulous tracts with an antiseptic wash, by means of a suitable syringe. I use for the sinuses a long-nozzled uterine syringe, capable of considerable force, and a twenty-five per cent. solution of peroxide of hydrogen, or a simple carbolized solution, with which the tracts are freely flooded. The next step is to thoroughly divulse the sphincter muscle in the usual way with the fingers. Then again irrigate the sinuses in the same careful manner as before with the same solution, and last with plain water. After this, inject into the tracts a solution of nitrate of silver, forty to sixty grains to the ounce of water. Then with a little carbolized oil, or vaseline, spread upon absorbent cotton and bound to the parts with a bandage, the operation is completed in simple cases.

In cases of the internal blind variety of fistula, openings should be made from the outside with the knife, in order that the pouches which are always formed at the termini of such tracts, and which always contain pus and debris, may be washed out and the sinuses cleansed. The only cutting necessary is in this variety, and possibly the enlargment of some of the external openings for the nozzle of the syringe which is introduced only far enough to inject the fluid. With an experience so limited as mine has been, it would be presumptuous in me to claim to have discovered a treatment that would supercede the long tried and successful methods of our text-books. I can only say that the above treatment is simple, and so far as I have tried it, it has been successful in every instance. Even a case of recto-vaginal fistula operated on in the same manner, recovered in a few days. In this case I may say that I employed a six or seven per cent. solution of carbolic acid, instead of the silver, because I did not have the latter solution with me, not knowing or thinking that I should be called upon to do more than lance an abscess, as I had done before for this patient on two occasions within a year.

The time saved to the patient in this operation constitutes one of its chief advantages. The number of days required to remain in the recumbent position is from four to eight, and with no wounds to dress and keep clean, the patient spends this time in comparative comfort.

I wish it understood that I do not claim anything original in this operation, except, possibly, that I have placed together in an unusual manner, some well known methods and principles.

The necessity of thoroughly cleansing the sinuses, getting rid of all foreign particles and matter, has been recognized and appreciated from almost the beginning of time. Also the divulsion of the sphincter has been employed, and some good results have been reported from this alone. And too, the injecting of irritants into fistulous tracts has been resorted to, and reports have been made of cures resulting from this alone.

But the arranging of these things in the manner and order given belongs to me so far as I know. The rationale of this treatment is based upon some well established surgical principles, together with a reasonable appreciation of the anatomy, pathology and physiology of the parts involved. In the first place we have to deal with the most dependent portion of a long and tortuous tube, the blood supply of which is influenced by gravitation, and whose return flow is through veins that are without valves and against gravity; with a mucous membrane that is in a constant state of hyperemia existing in all persons, it is claimed, whether they have ever had rectal disease or not. And further, we have a large ring-shaped muscle, the sphincter, which has scarcely

*Read before the Austin District Medical Society. 1893.

any bony attachments, and whose fibers are closely adherent to the integument, and blended more or less intimately with the other muscles and structures about the anus. This muscle stands vigilant guard over the great outlet of the human body. It is quite easy, then, to understand that the sphincter is very important, and that it is liable to become wonderfully hypertrophied from inflammatory stimulus during disease of these parts. The longer the disease continues, whether hemorrhoids, fissures or fistulæ, the greater the amount of blood to the parts, and consequently the larger the muscle grows and the stronger it becomes. Thus with increased size and strength there is a corresponding retardation of the return circulation which favors disease, and above all, there is a wonderful increase in the muscular tension of the whole ano-gluteal region. The voluntary power of this muscle is diminished and the involuntary power is proportionately increased, which also favors disease. Now, a fistulous tract, it matters not what produces it—a foreign body that has lodged above the sphincter, a traumatism, constipation, or what not, anything, in fact, that would cause an abscess,—for an abscess under all circumstances, it is claimed, causes the sinus—this fistula, except in the superficial form, has its origin above the sphincter within the bowel, and extends more or less tortuously down by the side of, and exterior to the muscle, and makes its exit through the skin within an inch or two of the anus. Let there be many of them or only a few, the destructive process is the same in all. The high tension of the muscular tissue causes retraction of the severed fibres, in accordance with the only function of muscular tissue, viz., contraction, and the result is non-coaptated walls. It may be likened to a taut suspender. As the rubber threads are cut they retract, leaving an elliptical or round-shaped hole. So in the case of the fistula in ano. Fecal matter, when in a liquid state, is always present in these sinuses, and prevents, together with the abnormal tension of the parts, a union by any plan of treatment other than cleansing and relaxing the tension. This removes the debris and permits the coaptation of the walls. The nitrate of silver is used simply to hasten union, which it does by exciting a temporary inflammation along the tracts, thereby causing a cure before the paralyzed sphincter can regain itself. This is exactly what is done when all of the holes are cut into one, the standard operation for this trouble. The sphincter is severed, which relaxes the surrounding parts and permits the cleansing of the tracts and the coaptation of the walls. Now, it is proposed to do no more than to state what has been the results of my limited experience with the operation which I have had the honor to present to you to-day, and I may be permitted to summarize the advantages claimed as follows:

1. There is from one week to a month saved in time to the patient.
2. There is less danger from incontinence.
3. There is no danger from embolism.
4. There is no suppurating wound to require daily dressing and cleansing.
5. The operation is practically robbed of its terrors.

Certainly, then, the operation is simple, and to my mind reasonable, and therefore I respectfully commend it to your further investigation and trial.

Japanese Double-tailed Fish.

The writer of "Science Notes" in the *Daily Chronicle* has a most interesting paragraph on the way in which the Japnese produce their extraordinary breeds of double-headed and double-tailed fishes. He quotes Dr. Ryder's conclusion that these ingenious people shake or disturb in some way the eggs of the normal species of gold-fish, and so interfere with the natural development of the organism. In confirmation of this theory he adduces the fact that Professor Weber, by actual experiment with the ova of common pike, produces double monstrosities of this kind "when the recently fertilized eggs were violently shaken." It is not improbable that the artificially-produced peculiarity of the double-tail might be inherited and become fixed. "We know that even in the higher animals monstrosities are often inherited, though the higher we advance in development the less apt are monstrosities to appear. We often see a two-headed calf, but the Siamese twins are phenomenal."

Tolled her love—The wedding bells.

SUTURING THE TENDO-ACHILLIS IN THE CORRECTION OF DEFORMITIES OF THE FEET.*

H. AUGUSTUS WILSON, M. D.†

Experience has shown that in most of the deformities of the feet, that require operative procedures for their correction, the tendo-achillis demands section, and not infrequently the lengthening or shortening of that structure only is required.

It is clearly apparent that all remedial measures, to be ultimately and progressively efficient, must have for their object not alone removing the appearance of the deformity by lengthening or shortening of tendons, but it is equally essential that the resulting strength of the tendon must be equal to the demands to be placed upon it.

The tendo-achillis communicates to the heel the power required to enable the arch of the foot to maintain the weight of about three times as many pounds as it exerts pounds of force. The leverage of the foot, in walking, is that of the second order of levers, that is, where the weight is placed between the power and fulcrum, the power being applied to the posterior end of the os calcis, the fulcrum being the distal extremities of the metatarsal bones, while the weight is imposed upon the astragalus.

Careful measurements of over a hundred approximately normal feet have resulted in showing that the average comparative distance from the end of the os calcis to the center of the internal mallelous, and from that point to the end of the distal extremities of metatarsal bone of the big toe was as 1 to 3.

This adverse position of the weight in its relation to the power and fulcrum, necessiates the use of a greater power moving through a small distance, to lift weight equal to one-third of the power through a proportionally greater distance.

The powerful action of the gastrocnemius and soleus muscles would be less confusing if it could be disassociated from its attachment to the weight it is to lift. Let it therefore be assumed that the upper end or insertion of this muscle is made fast to some immovable body and then its action in lifting the whole body will be apparent. A force of one unit, applied to the power end of this lever, would raise a weight of three units, if the foot was reversed, that is if the tendo-achillis was attached to the tarso metatarsal joints. This is the most common application of the second order of levers because it enables a small number of pounds of force to move a larger number of pounds of weight in proportion to its distance from the power and its approximation to the fulcrum. The advantages of less power is, however, at the expense of the arc of movement of the power end of the lever. Economy of space even at the expenditure of increased power often becomes necessary in the arts and is well exemplified in the human foot.

This expenditure of power, equal to three times the weight to be moved, requires that the means of communicating the power should be equal to the maximum strain that might be required to sustain additional weights, and thus we perceive that the tendo-achillis is the most important and, at the same time, the strongest and broadest tendon in the body.

The great importance of the tendo-achillis in locomotion, as indicated by its breadth and strength as well as by its mechanical function, demands that its strength and general utility after operation should be increased rather than lessened, and that the correction of the external appearance of a deformity should be secondary to a full re-establishment of the mechanical functions of the part.

The subcutaneous operation for lengthening the tendo-achillis, while it has had a brilliant career in assisting in the correction of deformities of the feet that were previous to its adoption corrected in part only, did not always fully meet the requirements.

The gaps between the divided ends of the tendons were filled by ultimate fibrous union which yielded when there was full contractile power in the gastrocnemius and soleus muscles, and only failed to yield

*Read before Pennsylvania State Medical Society, 1893.

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when those muscles were largely inactive from previous disuse.

The disturbance of the repose essential to a perfectly solid union was clearly shown by a patient upon whom I spliced the tendo-achillis under the local anæsthesia of cocaine, the contractions of the muscles increased the separation of the ends, a full inch, and this constant or voluntary contraction must make the uniting band attenuated.

It is impossible to disassociate the shrunken, atrophied, and often, useless calf with the possibility of its being assisted in its retrograde, by the weakened condition of the tendo-achillis divided in the often hap-hazard subtutaneous method.

If there was, prior to divison of the tendon, an atrophy or enfeebled calf, analogy would indicate that favorable condition would promote its growth and development until a full or approximately full usefulness could be obtained.

That the new band of union uniting the tendon is capable of stretching has become will established in cases that have required open section at some subsequent time. Several illustrations of this have come under my notice, in one of which the originial separation of one inch had increased to two and one-fourth inches. The fibrous connecting band was extremely thin and so firmly bound to all the surrounding structures that a most careful dissection was required to lift it from its bed. It wasfound to be attenuated to suchan extent that it was found impossible to use it in the effort to shorten the tendon, and recourse was had to a method of splicing, by taking parts of the original tendon.

In a large number of relapse cases that have required subsequent division of the tendo-achillis, it has been found that it was practically impossible to find a tendon. The extensive amount of elongation so often seen after transverse fracture of the patella is still further evidence in the same direction.

The inaccuracy and, therefore, uncertainty of the results to be obtained by simple subcutaneous division of tendons made the reception of methods of accurately elongating and shortening tendons, by splicing, a boom that has been rapidly seized by progressive operators. Although asepsis prepared the way, surgeons were not ready to take the advanced step of suturing tendons until time had elapsed to prove the benefits to be derived from the simple section through an open wound.

I desire to here acknowlehge my personal indebtedness to Dr. W. W. Keen, of Philadelphia, from whom I first learned, on March 4th, 1891, of the practical application of accurately lengthening tendons. On the above date Dr. Keen read before the College of Physicians of Philadelphia, a paper entitled: "A New Method of Tenotomy, by which the Tendons are Lengthened to a Definite Extent, instead of the present Hap-Hazard Method."

The patient, with post hemiplegic contracture of the flexors of the fingers, was operated upon by Dr. Keen, on November 29th, 1890. The method of procedure was then described. "Each tendon was first split in the middle, one and a quarter inches, and then, at the two ends of this incision, section of the opposite halves of the tendon was made. The two cut ends were then slid past each other and sewed together for a distance of half an inch, making three quarters of an inch of lengthening." On December 19th, 20 days after the operation, it is recorded "She went home to-day. Her hand is in much better condition though she cannot yet flex the fingers to any extent. The tendons are not torn loose, in as much as extension faradization flexes the fingers."

Quite recently, March 25th, 1893, the *Centralbatt fur Chirurgie*, published an article by Dr. Trnka entitled "A Contribution to the Technique of Suturing Tendons" in which the author speaks of methods which he employed for the first time in 1887. Trnka utilizes a lateral section of the upper portion of the divided tendon which he turns down and stitches securely to the lower portion, or else he unites the divided ends by strands of catgut securely sutured to each of the divided ends of the tendon.

While the two methods of acurately operating upon tendons were devised for the purpose of elongation, that which is most frequently required, I was impressed with the applicability of the longitudinal splicing method to the shortening of tendons.

In the discussion which followed the reading of Dr. Keen's paper on March

4th, 1891, I spoke of its applicability to shortening tendons. On June 10th, 1891, I resorted to the method in a case of paralytic talipes calcaneus, and have since that had occasion to employ it four times, although there are no published records.

Other surgeons embrace the methods described and, in addition, those in which it was attempted to obtain the same result by recourse to subcutaneous methods. It is clearly apparent that the essential feature of the methods described is the suturing together of the splice so that the elongation or shortening should be of a definite amount. In the subcutaneous methods there has been no attempt as far as I known to suture tendons, and shortening cannot be accomplished subcutaneously.

LARGE CYST OF KIDNEY; NEPHR ECTOMY; RECOVERY.*

L. S. M'MURTRY, M. D.†

The extension of the field of abdominal and pelvic surgery, and the splendid results attained in recent years, have become so familiar to the profession that isolated cases have ceased to be of special interest. The following case, however, is somewhat unique, and illustrate so many important practical points that I deem it worthy of special report and discussion.

On June 26th I was asked by my friend, Dr. Henry E. Pelle, to see a patient with him in the west end of the city. The patient is thirty-two years of age and unmarried, and presented the following history and symptoms: About three years ago she noticed an enlargement of the abdomen toward the left side. It gave her no discomfort at first, but she observed that it steadily increased in size. During the past year it had grown rapidly, and had now assumed the proportions of a large abdominal tumor, giving her abdomen the general contour and appearance of a woman far advanced in utero-gestation, except the tumor was larger toward the left side. Her general health was excellent, except that she was losing flesh, and suffering more and more with pressure symptoms. During the past few months she had preceptibly emaciated, and was unable to eat a full meal on account of the discomfort following. Her activity was interfered with also, being unable to discharge her duties easily on account of the weight and pressure of the tumor. Physical examination of the abdomen disclosed the typical signs of a monocystic ovarian tumor. It occupied the general abdominal cavity as well as the pelvis, had pushed the uterus backward into Douglas' space, thinned the abdominal walls, and fluctuated distinctly upon percussion. All the symptoms were characteristic of a cyst. Abdominal dropsy was readily excluded. She had expressed her desire to Dr. Pelle for permanent relief, and he had made known to her the necessities for operative interference. She was at once placed upon preparatory treatment, and went to the infirmary to undergo the operation.

The operation was performed on July 3d, at 9 A. M. Besides assistants and nurses, Dr. Pelle and Dr. R. C. Chenault, of this city, were present. A free incision was made in the median line between umbilicus and pubes, as in ovariotomy. On dividing the parietal peritoneum I was puzzled by finding another movable layer of peritoneum covering the cyst. My first thought was that it might be an ovarian cyst which had grown in the leaflets of the broad ligament so as to present such a duplicate fold of the serous membrane, but passing my two fingers down in front of the cyst into the pelvis I found both ovaries in their proper position, and quite normal in every respect. This demonstrated that the tumor had its origin in the post-peritoneal space, and had carried the peritoneum in front of it in its development. Following the outline of the tumor with my hand, I soon traced its attachments to they left lumbar region and satisfied myself that I was dealing with a large cyst of the left kidney. Announcing this to the anæsthetist, Dr. J. W. Guest, he immediately substituted

* Read before the Clinical Society of Louisville, July, 1893.

† Professor of Gynecology in the Hospital College of Medicine, of Louisville.

chloroform for ether, which he had been using up to this stage of the operation, and continued to use chloroform throughout the remainder of the operation. Cystic degeneration of the kidney usually presents a large number of small cysts clustered together, and hydro-nephrosis, which is the result of an obstructed ureter, is limited for the most part to the pelvis of the kidney with varying degrees of renal structures preserved. This cyst, however, presented the pearly hue of an ovarian cyst, and, as the specimen presented herewith shows, consists of the capsule converted into a large single cyst. The capsule was distended and rendered very thin. It was easily punctured with the trocar, and the contents emptied into the tub beneath the table. I presume that it contained about one gallon of clear serous fluid. After emptying the cyst I found quite a task presented in separating the sac from its attachments to the peritoneum of the left lumbar region, and in freeing it from the spleen, to which it was firmly attached, and which appeared as a cap to the tumor.

In separating the spleen, although observing the utmost care, I injured the capsule of that organ and denuded a considerable surface upon its inferior border. This started a capillary hemorrhage, which persisted throughout the remainder of the operation and for three days afterward. After freeing the cyst in all directions, I tied the ureter and divided it. I then secured the renal vessels with a strong silk ligature, ligating them in two parts, and cut away the cyst. I then closed with fine silk sutures the opening in the posterior layer of the peritoneum, through which I had delivered and removed the diseased kidney. An examination of the kidney on the right side at this stage of the operation demonstrated that it was of normal consistency, but very appreciably enlarged, which I attribute to the additional work thrown upon it by the progressive crippled condition of the other kidney. After cleaning the abdomen thoroughly and securing all bleeding points, I found the denuded surface of the spleen still oozing, and that the sponge packing I had applied had done little to arrest it. The bleeding was not great and not active, but consisted of a steady oozing of bright blood.

In order to deal with the pedicle and secure thoroughly the renal vessels, I had made a transverse incision in the abdominal parietes at right angles to the median incision, and extended this into the left lumbar region. I now closed the abdomen by suturing carefully both incisions, being careful to adjust accurately the severed rectus muscle end to end, and having placed a glass drainage-tube through the lower angle of the median incision, with the point resting in Douglas' space, where all oozing fluid would naturally gravitate, the usual dressing was applied, and the patient put to bed in good condition. There was no sweating or other symptom of shock, the pulse being 104 and of good volume.

The convalescence has been exceptionally easy and uneventful. The secretion of urine was quite free, and indicative of excellent kidney function. This has continued without interruption throughout her convalescence, and as it is evident from the specimen that all secretory tissue had long been destroyed in the diseased kidney, its fellow had evidently assumed compensatory structural and functional activity. The drainage was quite free for the first twenty-four hours, the bright color of the blood showing that it came from the spleen. This gradually ceased, and the tube was removed on the fourth day. The pulse remained under 100, and the highest temperature recorded was 99.6° F. The large double incision united throughout by first intention, and the stitches were removed on the ninth day. As a precaution against hernia after such extensive incision of the abdominal walls, I have kept the patient upon her back, and will insist upon keeping her in bed for three weeks, by which time organization and consolidation of the incision will be complete. Her appetite is excellent, and all her digestive and eliminative functions seem to be carried on perfectly, which I interpret as an indication of good compensatory power on the part of the right kidney, and a guarantee of restoration to perfect health. This woman has naturally a strong constitution, has been accustomed to health-giving habits of frugality and industry, with temperate habits.

I herewith present for examination the sac of this large tumor which in its lower part still retains an outline of the form of the kidney. The fluid contained in this

cyst was not urine, but a perfectly clear fluid, such as we find in a typical parovarian cyst. It was an illustrative case of general cystic degeneration of the kidney, the capsule of the kidney forming a strong cyst wall, just as obtains in large ovarian cysts.

The practical lessons to be deductcd from this experience are:

1. That in the diagnosis of abdominal tumors a large experience and painstaking investigation can not determine infallibly the exact character or even typical illustrations of ovarian tumors. The greater frequency of ovarian cysts alone determines a presumptive diagnosis between ovarian cyst and renal cyst. The exploratory incision is at last the means of positive diagnosis.

2. In operations presumably for simple, uncomplicated ovarian tumors the safety of the patient demands that the operator be qualified and prepared to deal with unexpected complications, and to do any operation known in abdominal surgery.

3. The results of nephrectomy, as shown by recent work, place this class of tumors within the limit of safe surgical procedures.

4. In dealing with large renal growths, and where nephrectomy may of necessity follow nephrotomy, the lateral abdominal incision in the semi-lunar line is preferable to the lumbar incision.

IMPROVEMENT OF HEARING AFTER THE REMOVAL OF POLYPI AND GRANULATIONS FROM THE MIDDLE EAR.*

LOUIS J. LAUTENBACH, M.D., PH. D.†

Among the frequent conditions found in neglected suppurative otitis media are polypi and granulations. These are often looked upon as of very serious import, and as making the subjection of the inflammation more tedious and restorative of function well nigh impossible. In contradiction to this view I claim that restoration of function in these cases is more frequent as well as more thorough than in chronic suppurative cases of equal duration without granulations or polypi. I do not mean to say that this is invariably so, but that it is usually the case. In cases of chronic suppuration with these growths present, I feel more hopeful of stopping the discharge without an excision, of closing the perforation and especially improving the hearing. This conclusion has been reached as the result of some twelve years of special work and the examination and treatment of upward of fifteen thousand ear patients.

The explanation of this clinical fact is, perhaps, rather a difficult one. In long-continued suppurative cases without these growths we usually find a general sclerosis of the mucous tissues, the epithelium much changed in character and the membrane of the middle ear a scarred and cicatrized tissue binding down and distorting all the structures. In cases with polypi and granulation there is present a reparative process. As soon as the tissue become ulcerated, new tissue forms, sclerotic action here giving way to a proliferation. The cause of this difference may be the circulatory supply. In the sclerotic cases it is restored upon the removal of the growth. I have found that in such cases if the auditory nerve is intact, I have invariably improved or restored the hearing.

In a case treated in 1884, upon the removal of a polyp by the snare, the hearing was immediately improved, and within two weeks was normal. The same case was seen in February of this year, and was normal at that time.

In 1883, I treated G. S., Bristol, Penna., burned out a mass of granulations, and after six month's treatment he had perfect hearing, although there was a very large performation of the membrana tympani. His hearing in December, 1892, was still perfect.

March 3, 1893, examined Miss M. H., age 24. Both ears had been suppurating

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*Read before Pennsylvania State Medical Society, 1893.

†Surgeon to the Pennsylvania Eye and Ear Dispensary; Chief of the Eye Clinic, German Hospital of Philadelphia.

for twenty-two years, occasioned by scarlet fever. Conversation heard with difficulty. Watch, right ear, 3½ inches; left ear, not on contact. Perforations posterior to handle of malleus occupied by granulations in both ears. Granulations removed. Hearing distance, April 28, watch, right ear, 12 inches; left ear, 5 inches. Conversation heard without effort. She considers her hearing perfect.

At present, I have under charge, Mr. F. H., age 21, Wayne, Pa., a case of entire destruction of the membrane, with breaking down of the mastoid cells, the result of an acute scarlatinous otitis of 15 years duration. The mastoid sinus was large, about 1¼ inches long. Occupying the middle ear cavity was a polyp, filling it entirely and interfering with the circulation to such an extent as to entirely occlude the meatus. Yet, despite these conditions, he is commencing to hear the watch a few inches from the ear and can hear ordinary conversation with effort.

These are but four, taken from some hundreds of cases, in all of which, when the treatment has been persisted in, the result has always been the same—either restoration or marked improvement of hearing.

CLINICAL REPORT OF A CASE OF HEPATIC ABSCESS. *

A. J. BLOCH, M. D., New Orleans, La. †

I was called on the 30th of March last to see a gentleman, sent from the country by his physicians to see whether surgical treatment could not be of benefit to him. Mr. B. was a native of Louisiana; his family history was free from tuberculosis or syphilis. Prior to January, 1892, he enjoyed excellent health, at which time he was first confined to his bed by fever and pain in the right side. After prolonged medical treatment he experienced no relief, and came five months subsequently to New Orleans. This proving of slight benefit to him he returned home, and again came to New Orleans, this latter time five months ago. Being discouraged, having experienced no benefit, he determined to return home and die. Whilst on the train, he was suddenly taken with most violent pains in the affected side, and in another moment he coughed up what he supposed to be a quantity of blood, but which subsequently proved to be liver pus.

The diagnosis of his trouble was quite evident now; his general condition being so much below par, his physician at home placed him on cod liver oil, quinine and a cough mixture. They did not attempt a free incision to remove the septic material, not knowing exactly where to locate the pus cavity. Thus his condition remained, constantly coughing up pus continuous septic fever and great progressive emaciation.

Upon taking charge of his case, I immediately explored and located a pus cavity in the right lobe of the liver. I could not make out any definite destruction of lung tissue. There was an abundance of rales; these, however, might have been due to accumulated pus in the bronchial tubes. Dullness was well marked at the lower lobe of the right lung. It was quite evident to me that a chronic pneumonia must have supervened from a constant irritation of the septic material coughed up. The day following my first examination, I had him sent to the New Orleans Sanitarium, and, on April 1, under chloroform, I resected the rib and made a large opening into the abscess cavity, removing fully one pint of very foul pus.

Fearing to irrigate under chloroform, as the cavity communicated with the lung and the water might clog up the latter and produce death from asphyxia, I packed the cavity with iodoform gauze and had the patient removed to bed. The patient rallied well; his pulse, as before the operation, was 155 a minute; his respiration 40. The following day I irrigated with a

*Read before Orleans Parish Medical Society, April, 1893.

†Visiting Physician to Charity Hospital; Clinical Assistant to the Chair of Physical Diagnosis and Practice of Medicine, New Orleans Polyclinic; Assistant Instructor in Physical Diagnosis, Tulane Medical College.

2 per cent. solution of carbolic acid and substituted a drainage tube for the gauze. The change in his condition the next week was phenomenal; his temperature became normal; his pulse was reduced to 110, stronger and fuller; his appetite was inordinate, eating or asking to be fed whenever awake; his respirations from 24 to 28 a minute. He had been taking a tonic of iron and quinine, and when constipated a little sulphate of magnesia was given. Each day I irrigated the cavity with the carbolized solution, after which I injected peroxide of hydrogen, followed by iodoform and glycerine (4 drachms to 6 ounces). On April 15 I went to pay my daily visit. I found my patient in a very gratifying state; he complained a little of hiccough, but so confident did I feel in a future recovery that I promised to let him sit up in ten days. He was prepared to be dressed by the nurse in attendance, the patient assisting himself in the preparation. As soon as I introduced the nozzle of the syringe into the wound he began to cough; this was nothing unusual, as I experienced the same difficulty every day. I stopped for a moment, which gave him relief, and began again very gently to remove the pus. This time the cough became violent; my patient became cyanotic; I immediately grasped his pulse; it could not be felt; I tried every means possible to revive him, with no result; he was dead. I was unable to hold an autopsy and can account for his death to shock only, produced by a rupture of liver attachments, with flow of pus and water into the abdominal cavities, superinduced by the cough.

The points of interest in this case must be very apparent. Death might have ensued from several factors; firstly, from asphyxia or drowning the patient by irrigation; secondly, from shock resulting from a rupture of adhesions between the liver, abdominal wall and diaphragm. Another cardinal point is the danger of delay in making an early incision, to prevent a communication with the bronchial tube. Once this communication is formed the graver does the condition of our patient become. The constant passage of septic material through a lung, no matter how healthy, must leave destruction in its wake, and should we succeed in affecting a cure of the primary and graver trouble, we leave a suitable nidus for the propagation of the tubercule bacillus. I feel confident that my patient suffered from some such trouble.

The conclusion I draw from this case is: All suspected cases of liver abscesses should be explored early; a negative result will not increase the danger of the patient, a positive one will surely be of inestimable benefit. If pus is located an early incision should be made and the cavity thoroughly evacuated. If a communication has already formed with the bronchial tube irrigation should never be practiced, but in its place the cavity should be constantly packed with iodoform gauze. The latter will absorb the pus and disinfect the cavity and the patient will be spared the danger from which my patient died.

SOCIETY REPORTS.

THE CLINICAL SOCIETY OF LOUISVILLE.

Stated Meeting, July 11th, 1893.

Dr. L. S. McMurtry reported a

LARGE CYST OF KIDNEY; NEPHRECTOMY; RECOVERY.

(See page 368).

DISCUSSION.

Dr. W. L. Rodman; I take the position Dr. McMurtry does in these cases, that we cannot absolutely dispense with drainage in abdominal work. While in some instances it may be discarded, still a case of this kind emphasizes the necessity for it. I think the Doctor is to be congratulated upon the good result.

Dr. J. A. Ouchterlony: The case reported is remarkably interesting in many ways. I have seen a number of cases of cystic degeneration of the kidney, and yet I have never seen one having the least

resemblance to this. First of all in cystic degeneration of the kidney there are usually several cysts. The largest cyst I ever saw was a case reported by myself several years ago, it contained about a teacupful of fluid. All of the cysts had thin walls; they usually have extremely thin walls. Here is one single cyst with a thick wall and has the ureter entirely obstructed. No communication between the ureter and the cavity. It is difficult to picture to one's self exactly how this case began as there are no remains of the usual cystic formation.

Another interesting point about the case is that the disease was entirely limited to one side which is not the rule. In all cases of cystic degeneration of the kidney that I have hitherto seen, the disease was bi-lateral.

MILIA.

DR. T. P. SATTERWHITE: I want to ask Dr. Bloom a question in regard to a form of growth that occurs particularly upon the eyelids, if he is familiar with the little growths called milium. The reason I ask the question is that I have a case in a child about nine years of age. For some time past he has had what I thought to be ordinary warts on both hands; they were very numerous, and he formed the habit of biting them off. Now, the mucous membrane of the mouth, particularly of the lower lip, is studded with these milium. My understanding has always been that milium were inoculable. However, in this case the growths seem to have communicated from the hands to the mucous membrane of the mouth. I would like to ask what Dr. Bloom's experience has been in this connection.

DR. I. N. BLOOM: Milia are very common and when opened are found to contain a small amount of cheesy matter and epithelium. No case of contagious milium was ever known.

CANCER OF RECTUM—EXCISION—RECOVERY.

DR. J. M. MATHEWS: A gentleman was referred to me several months ago from Lexington, Ky., by our friend Dr. Skillman, for some rectal trouble. In giving the history he stated that there had been injected some preparation supposed to be carbolic acid, into some supposed tumors of the rectum; that they had sloughed off, giving him a great deal of pain, and in that particular he was slightly better but that in others he was worse. In making examination I was pretty well satisffed that he suffered from some malignant growth of the rectum, and I so wrote the Doctor. The patient returned home and five days ago came to the city for the purpose of being operated upon. I made a further examination and found a circumscribed growth taking in perhaps three to three and one-half inches of the lower rectum. That it was malignant I had no doubt, so I decided to operate. In saying that I decided to operate I mean that I decided to extirpate the growth, for I believe for many reasons this is far preferable to the operation which is being done most extensively by other operators for similar conditions; that is colotomy. I could easily circumscribe the growth, therefore believed that I could remove the whole mass. I submitted the proposition to him, stating at the time that the great fear would be that he might suffer from incontinence of feces, although in some other cases that I have on record, the contraction of the cicatrices has been sufficient to control the actions to a remarkable degree, at least. He accepted the proposition to operate, and, under anæsthesia I did the operation. It is not necessary to enter into details except to say that in this case I removed the coccyx to give me better room to operate by making a careful dissection, tying off the vessels as they were cut and pulling down the rectum with the growth, I cut it off. I did in this case as I have in others, and have several times been criticised for it, but the more I do it the more I am satisfied that I am pursuing the right plan; that is, I did not attempt to bring down the mucous membrane of the gut proper and stitch it to the true skin. I leave it expecting the wound to heal by granulation. My object is just this, to get cicatricial tissue, in order that the patient may control his evacuations. I watch the whole process carefully and see that there is no healing of the granulations to each other by apposition; in other words I keep different sized tubes in the rectum or anus until the wound is entirely healed.

I believe this man has a good chance of ultimate recovery from cancer. Of course the glands were a little involved, being

slightly enlarged in the inguinal region, but I believe these glands can be enlarged by inflammatory processes without being infected with cancerous material. At least this has been my experience in the past. I have often seen them so enlarged and so inflamed, and disappear after the operation.

This patient is only thirty years of age, has been a very healthy man up to a year ago when the symptoms were noticed, having no cachexia at all or other pronounced constitutional symptoms. I believe his chances of recovery are about the same as in the removal of the malignant breast of a woman; he suffered no further inflammation in the inguinal glands than perhaps would occur in the axillary space in malignant growth of the mammary gland in the female. This is the fifth day after the operation, and he has never suffered any pain—in three hours after the operation he complained a little but none since. I allowed his bowels to move to-day.

I speak of the case not that there is any unique feature in it, but principally to emphasize the belief that where extirpation can be done in malignant growths of the rectum, it is far preferable to the disgusting operation of colotomy.

DISCUSS ION.

Dr. W. O. Green, (visiting): I think Dr. Mathews pursued the proper course in this case. Cripps, Allingham, Treves and the majority of English surgeons state, I believe, that all cases should be operated upon where there is a fair chance of completely removing the diseased structures, and where the cancer is freely movable in all directions: Cripps points out in these cases that the most favorable ones are those in which the disease is limited to one side of the gut, resembles an ulcer, where the upper border is well marked, and healthy mucous membrane can be felt beyond the growth.

It is possible, where the disease is situated three inches up, to remove the malignant growth without interfering with the peritoneum and I believe this is the proper procedure under the circumstances. It is very important in removing cancerous growths from the rectum to know whether or not the peritoneum is opened. If it is, the chances of septic infection and subsequent peritonitis are greatly increased.

In regard to the prognosis: In the practice of American, English and Continental surgeons the direct mortality in excision of the rectum for cancerous growths is given at about 19 to 20 per cent. while the number of resultant cures of four years duration, have been shown not to exceed, at best, 11 per cent.

Concerning the cases that are suitable for operation: I think about fifteen to twenty per cent. of all cases of carcinomata of the rectum can be operated upon by excision.

Dr. Mathews spoke of not stitching the mucous membrane to the anus: I think he is quite right. In operations of this character the bowel can be stitched to the skin even where the gut has been removed some distance up, but the risks of peritonitis and cellulitis are far greater than otherwise. It is not likely that healing by first intention will take place on account of the great tension, much bruised tissues and number of ligatures required in closing the arteries. Healing by granulation suggests itself therefore as the proper course. In removing growths high up in the rectal pouch or there is an attempt to preserve the functions of the anus, a circular suture of the two ends of bowel is often practiced. Leakage has been shown to occur in fully half these cases. This, of course, establishes an artifical anus, which does away with the use of the natural anus and the dangers of septic infection are, consequently, much increased. I believe that, bearing in mind this liability of infection, when a circular incision is practiced a preliminary colotomy should be performed.

Bacteria in the Soil at Different Depths.

Some investigations carried out by Dr. Alexander A. Houston, of Edinburgh, respecting the number of bacteria in the soil at different depths from the surface, go to prove that the micro-organisms become less and less abundant as the depth from the surface increases. For example, the average number of germs in a gram of soil examined, which was taken from the surface, was 1,687,799; at a depth of three feet this average fell to 173,807; and at a depth of six feet it was anly 410. These figures are interesting, and would tend to show that at certain definite distances from the surface the soil would be sterile.

THE MEDICAL AND SURGICAL REPORTER

ISSUED EVERY SATURDAY

ADDRESS
Care P. O. Box 843, Philadelphia.

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Editor.

RODERIC C. PENFIELD,
Publisher.

316-18-20 North Broad Street,
PHILADELPHIA.

TERMS:—Five Dollars a year, strictly in advance, unless otherwise specifically agreed upon. Sent three months on trial for $1.00.

REMITTANCES should be made payable only to the Publisher, and when in sums of Five Dollars or less, should be made by Postal Note, Money Order or Registered Letter.

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SATURDAY, SEPTEMBER 2ND, 1893.

EDITORIAL.

THE PRESIDENT'S HEALTH.

It seems a confirmed weakness of the secular press in dealing with the affairs of men prominent in public life, to announce them more or less incapacitated by illness—the habit of political opponents; or else suffering from an excess of good health—the habit of political supporters. So general is this custom of exaggeration that the public put little faith in reports on this subject. There is always a disposition on the part of friends to deny all rumors of sickness. This was notably so when Garfield was dying; also when Sheridan and Blaine were upon their death beds. The more prominent the man, the more he suffers—from press reports, so that when actually sick or threatened by impending death, the true knowledge of the matter comes like a shock to the public.

That it is fortunate the public is not generally aware of the truth is well illustrated in the present case of President Cleveland. The existing financial stringency, the confusion and uncertainty concerning the commercial interests of the country and other questions of vital importance to the nation, have brought about a condition of affairs that alarm for the chief magistrate's health would make "confusion worse confounded."

Sensational reports of President Cleveland's physical condition, together with some actions apparently inexplicable, have of late filled the secular press. The reports of ill health have been regarded in the same light as the reports of cowardice in meeting political emergencies. But it now seems that there was some foundation for the former reports, as it is asserted on what appears to be good authority, that not only was the President's health impaired seriously, but that he has submitted to an operation for immediate relief, and in hope of the ultimate cure of a serious condition.

It is stated that Mr. Cleveland has been suffering for some time from a morbid growth "in the bones of the left upper jaw and nose," the nature of which could only be determined by microscopical examination; the inference being that the growth was malignant. The diseased

portion of the bone was thoroughly removed without an external incision and the immediate recovery was complete. The operation was performed under nitrous oxide anæsthesia, while the President was on board of a friend's yacht on the first day of July last. None but the most intimate friends of the President were cognizant of his condition or of the performance of the operation at the time.

President Cleveland's wonderful self-control and endurance, and his intense devotion to the duties of his position have excited the admiration and respect of all, even his political opponents. The hope that the growth will prove benign, or if not, that the operation was entirely radical, will be universal. Doubtless the profession will soon be aware of the actual nature of the disease.

TRANSLATIONS.

INTRA-UTERINE INJECTIONS IN PUERPERAL INFECTION.

Ouimet (*L' Union Med. du. Canada* April, 1893) states that in 1750 intra-uterine injections were first introduced into France in the treatment of puerperal complications. In 1853, Eisenmenger in Germany, made injections of charcoal water in a case of putrid infection. As to the *mode of action of intra-uterine injections*, it is recognized to-day that puerperal infection is a septicemia due to the absorption of pus formed in the uterine cavity. When delivery has been complete there is nothing but the uterine mucosa to suppurate, but in the contrary case, there is added to this the putrefaction of the debris of the ovum or of a clot retained in the uterine cavity. Consequently, to cure the puerperal infection it is necessary to meet two indications: to prevent the absorption of pus by removing it, and to arrest suppuration. Intra-uterine injections have this double power, and they also have a mechanical and a therapeutic action. The mechanical action consists in the removal of the contents of the uterine cavity, and M.M. Budin and Auvard have demonstrated the truth of the statement that intra-uterine injections bathe thoroughly the entire uterine cavity. The injection by removing from the uterine cavity the putrefying substances causes rapidly an amelioration in the general state and a fall of the fever. This rapid effect has been observed by all investigators but it has only been since the introduction of antisepsis that we may observe actual cases of cure or very rapid amelioration. By removing the septic products the injections suppress the cause of general infection of the organism, because the absorption of pus ceases. If the infection is quite superficial and the disinfection complete by the first injection, there is no reproduction of pus, the fever falls and a cure is produced. The antiseptic agents act upon the surface and not in the depth of the tumor, so that when the infection is deeper the injections have a slighter action, and it is necessary to make two, three, or even ten or eleven injections in order to make a cure. In truth the antiseptic agent has disinfected the surface but the septic products contained in the deeper layers are eliminated, and it is necessary to repeat the injection to remove them. The antiseptic agent acts in an analogous manner upon foreign bodies, membrane, clots or placental debris, which the uterus nearly always contains in cases of infection. Under the influence of antiseptic injections their putrefaction is arrested more or less rapidly, and they are eliminated as detritus without suppuration. During this local action the general state ameliorates progressively, because by hindering the absorption of new septic products, the injections permit the organism to eliminate the products already observed without undergoing a new weakening from the absorption of a new quantity of septic products. In order that the antiseptic action be efficacious it is necessary that the injected fluid remain a certain time in contact with the mucosa. To meet this condition it is necessary to pass a very large quantity of

† Translated for THE MEDICAL AND SURGICAL REPORTER by W. A. N. Dorland, M. D.

fluid into the uterine cavity, four to six liters at each injection.

Therapeutic Indications.—It is evident that the action of intra-uterine injections is most prompt if the infection is superficial. It is therefore proper to begin the treatment early. An injection should be made each time that there is an elevation of temperature that cannot be manifestly attributable to a cause foreign to the uterus. If an examination of the placenta shows that there remain portions in the uterine cavity, or if there be a peculiar offensive odor of the lochia, there are indications that the uterus is infected and that injections are required. In a slight case, when the temperature does not exceed 38° C, it will suffice to make one injection daily. If the temperature be more elevated, two or three injections should be made daily, especially if the infection is produced by the putrefaction of a foreign body. During the past ten years very many antiseptic substances have been employed in obstetrics; salicylic acid, thymol, boric acid, permanganate of potash, are those that are most serviceable for intra-uterine injection. Since the introduction of the bichloride of mercury by Professor Tarnier, this agent is nearly universally employed for intra-uterine injections. It is necessary to employ a 1 to 4000 or 5000 solution. Albuminura, by hindering the rapid elimination of the poison in case a certain portion be absorbed, is a formal contra-indication to its employment. In this case carbolic acid, 2 to 100, should be employed. The injecting fluid should have a temperature of from 30° to 35° C. At each injection it is necessary to use at least 4 to 5 liters of the fluid. The injection of the sublimate should always be followed by the injection of one or two liters of boiled water to prevent absorption of the fluid that remains in the uterus and vagina, an absorption facilitated by the wounds in these organs.

Accidents.—Intra-uterine injections, while constituting a powerful means in the hands of the physician of combatting puerperal infection, are not absolutely without danger. Some of the objections offered to their use are theoretical, others are real:

1. *Passage of the liquid through the tubes.* This objection is purely theoretical; experimentation has always demonstrated its falsehood and clinical observation has never proved it. On the contrary, experiments on cadavers, and clinical observation prove that this danger does not exist, and it becomes necessary to consider as strongly hypothetical the possibility of the passage of an injected fluid through the tubes into the peritoneal cavity.

2. *Entrance of air into the uterine sinuses and thence into the circulation.* This is also an entirely theoretical objection. Nevertheless, to prevent this danger, it is proper not to introduce the sound into the uterus until it is completely deprived by air.

3. *The production of hemorrhage.* To prevent this accident it is necessary to avoid much pressure, and to provide oneself with a perfectly sound and smooth instrument.

4. In some cases are observed acute and transient symptoms, consisting in chills, renal pains, acceleration of the pulse, cyanosis, syncope, convulsive movements. These may be attributed to fear, impressionability, hysteria, sudden distension of the uterus, too low temperature of the fluid.

5. *Perforation of the uterus.* In the introduction of the sound it is not necessary to employ force. It should glide in of itself. Perforation may result from an obstacle to the free passage of the sound; from undue softness of the uterine tissue, or from a bad direction or undue force applied to the sound to overcome an obstacle. This is a very grave accident, and probably the only one to fear. To avoid it violence should never be employed, and should the sound meet with an obstruction, it is always well to ascertain its nature before executing a manœuvre to overcome it.

Conclusions. 1. Intra-uterine injections constitute a rational and efficacious treatment in puerperal infection.

2. They should be made with a sound which assures the easy flow of the liquid and a complete lavage of the uterine cavity.

3. The sound of M. Baudin fills these condition; also that of M. Doleris.

4. If the sound meets with an obstacle in its passage it is necessary always to ascertain its nature and never to employ force to free it, because the softness of the uterine tissues renders possible its perforation.

.5 The injections are made with a solution of bichloride of mercury 1 to 5000; in case of contra-indication, with carbolized water 2 to 100.

ABSTRACTS.

CHOLERA: ITS PREVENTION AND TREATMENT.

Dr. Elmer Lee, of Chicago, says:

The leading propositions suggested and tried in the treatment of Asiatic cholera during the epidemic of 1892 in Europe, consisted of the following general plans. Early in the epidemic, lactic acid treatment was proposed on the ground that it would neutralize the alkaline accumulations in the bowels and so stop the multiplication of the bacilli.

The use of large doses of salol grew in favor as a new remedy during the epidemic. The average result of cases so treated could not be said to be satisfactory.

Calomel was everywhere a remedy even more used than salol. Formerly this drug was used in very large doses, but last year it was the very small doses which found favor. Especially was this true in the treatment of cholera in Hamburg.

Of the surgical measures, the infusion of solutions of salt were most practiced. The solution consisted of distilled water in which was dissolved one-half of one per cent. of common salt. This liquid was warmed to the temperature of the blood and either introduced directly into some large vein or injected with a long needle and a large barrel syringe beneath the integument of the abdomen. The amount of salt solution used in either case would be from one pint to one quart each time. In one case treated at Hamburg as much as thirteen quarts of salt-water were used from first to last. The patient recovered. The subcutaneous injections were frequently followed by cysts and sometimes abscesses appeared. Intravenous injections sometimes proved a godsend, but more frequently disappointment could be said to be the result. These injections were only used in the third period of the disease or the stage of collapse, algidity or asphyxiation, at which period, it would be rather unreasonable to expect recovery by virtue of any treatment.

The Italian treatment was much used and with frequent gratifying success. It consists of a clyster composed of the following constituents:

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Boiled water or infusion of chamomile, (warm)	2 litres.
Tannin	5 to 10 grams.
Laudanum	30 to 50 drops.
Powdered gum-arabic	50 grams.

This or some part of the solution is occasionally passed into the rectum, to be retained if possible by the patient. In the experience of those who have followed this method of treatment almost every case taken at the beginning of the disease has lived. It is certainly more reasonable in principle than simple medical management.

Of the experiments of Ferran, of Spain, and Haffkine of the Pasteur Institute, much has been said, but what has been said has failed to bring conviction to my mind. As cholera itself cannot be said to protect one who has had the disease, and recovered, against a second attack, then that which is less than cholera in influence cannot be expected to do it. The seat of the disease is located in the intestines, and, so long as the infectious juices are there, the lymph vessels in the processes of physiological function will continue to infect the blood. Can we hope to thwart physiological action of absorbents by hypodermic injection of cholera culture, made at some time, it may be years previous to the date of the passing epidemic? The answer by my judgment, is that such expectations are flimsy.

It is now well known that cholera is a disease of the alimentary canal. Its inciting cause is believed to be a germ taken into that canal through the medium of food and drink. There its presence is protested against by the absorbent vessels, which eliminate from the food the nutriment for the body. The first symptom produced by foreign invasion in the intestines is a diarrhœa, which may precede vomiting from one to three or even four days. If this be true, the bowels must be the seat of disorder, and the most direct method of reaching them by medication must be the best. If the stomach could be emptied of the foul material before the poison has passed further, there might be speedy relief and, indeed, no real cholera. After it has passed into the intestines, medicine administered through the stomach may be slow in reaching the seat of the disease, and even then can only mingle with the poison, holding out the hope that the one will be neutralized by the other. This hope, in truth, is seldom

realized. But if the poison can be removed from below, the course is left clear for nature to recuperate itself. The diarrhœa is an evidence of the great exertion put forth by the organism to rid itself of the death-dealing agency, and probably it would be effectual in the great majority of cases were it not that the nervous forces of the system are exhausted by the terrible strain ,before the required evacuation of the bowels is completed. A large irrigation of hot water, made soapy preferably by neutral liquid soap, introduced into the colon through a suitable rubber tube, is the simplest, and I am prepared to say further that it is a more satisfactory way of treating cholera than any other with which I am acquainted. The time to begin the irrigation is at the very earliest possible moment. The rule from which there need never be deviation is to treat the patient by irrigation of the bowels and rinsing of the stomach, without waiting for confirmation of the diagnosis either with the microscope or by the culture test. The best part of the practice is always to save the patient, even at the expense of fine statistics.

For internal treatment my experience taught me that the *peroxide of hydrogen*, given in cupful doses of the strength of 4 per cent., or even much stronger was a better antiseptic than any other drug heretofore known in the treatment of cholera. Then the treatment would be, first,immediate irrigations with hot water and soap, using from one to three gallons at a time twice a day for the first and second day. Once a day afterwards if required, which is seldom the case. At the same time cleanse the stomach with *peroxide of hydrogen* and hot water used freely—by urging the patient to drink. The feeding and nursing are the same as would be required by a patient suffering from septicæmia or other prostrating disease.

Cleanse the bowels, wash the stomach, feed the sick,keep them warm if cold,and reduce excessive heat by the cool bath rather than reliance upon drugs; using anything in an emergency that is the easiest and the most accessible to procure. The cholera patient may be convalescent inside of the first few days, or if not convalescent and not dead, the case goes into the typhoid state, after which convalescence may be deferred for several weeks or death may be the conclusion. The temperature prior to the fifth day is generally subnormal or a little above, but on the fifth day marked exacerbation and elevation of temperature indicates the typhoid condition.—*Chicago Clin. Rev.*

PHARMACOLOGY IN EUROPE.

Piperazin is steadily gaining ground in the estimation of European physicians, and is regarded as *the* remedy in all forms of uric acid diathesis in continually widening circles. Dr. H. Wittzack brings the latest contribution to the literature of the subject, and his experiences are equally favorable as those of Bisenthal and others who have fairly tried the remedy in practice. From observations in five cases of gravel and in one case of arthritis urica deformans, he draws the conclusions, that (1) diuresis is considerably increased, in the case of arthritis, the amount passed in the twenty-four hours being more than doubled; (2) the specific gravity and acid reaction of the urine is lowered, but never becomes alkaline or even neutral; (3) the appetite is not affected and no disturbance of the general condition can be attributed to the administration of piperazin; (4) that there is no difference in the action of free base piperazin and its hydrochloric acid salt, but in practice the salt is preferable because it is less hygroscopic. The author further emphasizes the necessity of administering piperazin continuously for some days (15 grains daily for a fortnight) before forming an opinion as to its efficacy, and at the same time describes subcutaneous injections of piperazin as both painful and dangerous, causing infiltration and a tendency to form an abscess.

The main outcome of Wittzack's experiments is that he conscientiously recommends piperazin in all cases of uric acid diathesis and regards it as a specific remedy. A similar favorable opinion is held by Dr. John Gordon, who at the request of the Scientific Grants Committee

of the British Medical Association undertook to test the power of solution possessed by piperazin on uric acid and uric acid calculi, and its therapeutic value in cases of gout or in uric acid diathesis. In his preliminary report on the first points in the research, he says, that there is distinct evidence of its solvent power both of calculi and uric acid. As yet clinical cases have not been obtained in sufficient numbers to allow him to draw conclusions as to its therapeutic action.

Piperazin is, however, still too new a remedy to escape objections against its employment, which mainly depend upon incomplete acquaintance with the characters of the base. Thus Dr. Roerig a short time ago reported a most unpleasant bye-effect of piperazin, which, if true, might well have raised grave doubts as to the advisability of its administration. He observed that after administration of piperazin to two persons suffering from uric acid diathesis the urine gave a copious precipitate with picric acid, and he at once rushed to the conclusion that albuminuria was induced by the action of the piperazin upon probably unsound kidneys. This result, however, was in distinct contradiction to the observations of earlier investigators who had administered as much as 90 grains piperazin *pro die* without finding albumen in the urine. The fallacy was, at once, evident when Biesenthal pointed out that even with 1 part piperazin in 20,000 parts water picric acid produces a distinct precipitate, so that considering the large proportion of the base that passes through the organism undecomposed there is no wonder that a precipitate is formed by this reagent in the urine after administration of 15 or 30 grains piperazin. The correctness of this opinion has been practically demonstrated and the nature of the precipitate more nearly investigated. Employing picric acid as reagent the distinction between albumen and piperazin is best shown by the disappearance of the crystalline precipitate of piperazin picrate on warming, whilst the albumen compound is insoluble both in hot and cold water. In the light of this knowledge Dr. Roerig's observations lose their startling character.

Instead of the employment of piperazin being limited it appears rather to be extending to new fields of usefulness. Dr. Hildebrant found that piperazin possesses the property of completely overcoming the elimination of sugar from dogs poisoned with phloridzin. By simultaneous administration of phloridzin and piperazin the usual diabetic symptoms did not appear, and the general condition of the animals remained good, the hydrochloric salicylic and phosphoric acids being equally active. The application of this treatment to a severe case of diabetes, by the administration of 15 to 25 grains piperazin *pro die*, given in 3 doses in aqueous solution, and persisted in for 14 days, reduced the sugar percentage from 7 or 8 to 3,3 per cent., whilst the general condition and nourishment of the patient was improved.

As the results of an investigation by Dr. Sittmann of the value of papain in stomach affections, the author found that it developed its digestive action alike in neutral, alkaline and acid solution, and in cases of absence or pathological change of the digestive juices reduced the albumen to an assimilable condition. He administered 5 to 8 grains papain (1½ grains sufficed to digest 150 grains coagulated egg albumen in 4 ounces of water in 2 hours), mixed with a little water, immediately after every meal of flesh. In acute catarrh of the stomach the improvement was noticeable after 2 or 3 doses, the pain disappeared, appetite increased, and in 2 or 3 days a complete recovery was affected, more than 6 doses never being required. In chronic catarrh the course of treatment required to be prolonged for a fort-night; in three cases of chronic dyspepsia, originating in ulcus ventriculi, the appetite was restored in a week. Even in 2 cases of carcinoma ventriculi, that ultimately underwent a post-mortem examination, the use of papain considerably diminished the pain after meals. It was also successful in neurosis of the stomach, and in hysterical and neurasthenical cases. It is evident, therefore, that papain is a valuable agent in maintaining the general assimilative conditions for a time in all cases where there is, from any cause, failure of the digestive juices of the stomach.

The fact that papain has the power of digesting and thereby destroying dead and diseased animal matter, whilst it is inactive towards healthy living tissue is also not sufficiently appreciated by surgeons. Although papayotin was originally introduced by Rossbach for the local antiseptic

treatment of diptheritic membranes, it has now been replaced by the cheaper and more active papain. Yet even this has fallen somewhat into disuse, and there is no doubt that the reason consists in its having been used too sparingly. As it is non-poisonous it can be applied freely without danger. In a recent contribution by Dr. H. A. Francis on the uses of papain as a "selective caustic" he relates that in his experience all traces of diphtheritic membrane disappear in a few hours in cases where the powder can be insufflated freely and frequently. In tuberculous ulceration he has also applied papain with success, and notably in lupus vulgaris In the latter case a saturated solution of papain in glycerin was given to be rubbed into the lupous patch night and morning. The papules gradually disappeared, the surface assumed a healthier appearance,and even became soft and flexible and only slightly discolored, the ulceration having completely healed.

It is astounding what conflicting reports appear as to the employment of pental as an anæsthetic, and although from time to time unpleasant and even fatal consequences are attributed to its use, as is the case with all anæsthetics,yet the fact that pental always finds a host of partisans, especially among dental surgeons, who maintain that they can employ it with comparative safety and without the disagreeable after-symptoms that accompany most anæsthetics,leads one to suppose that want of success is as much due to inexperienced manipulation or accidental circumstances as to any inherent defects in the compound. In a paper by a lady-doctor, Fraulein Kleindienst, a new development presents itself. Although the author concurs with Professor Hollander and others as to the action of pental on frogs and rabbits, and as to the happy results obtained in minor operations, having even administered it with success in anæsthesis lasting 48 minutes without any untoward symptoms, yet she condemns its use because she believes to have observed an injurious action on the kidneys, having detected in a few cases albumen and blood in the urine after pental narcosis. This evidence being so entirely new requires support before it can be accepted, especially as in two cases in which details are given, it appears that zinc chloride injections were made during the operation, and zinc chloride is known to injuriously effect the kidneys.

The direct consequence of this communication has been that Dr. Bauchwitz has made a special series of experiments to determine the truth of the appearance of abnormalities in the urine after pental narcosis. The results of his examination of the urniue, both of rabbits and human beings, are completely negative, nor was he able to detect any organic changes in the kidneys of rabbits killed by overdoses of pental. In fact, in his experience in operations on the teeth and mouth, pental is at present the best anæsthetic we possess for short operations, in consideration of its reliability and general condition of the patient after the operation.

Calomel is a drug so well known that any reference to its use almost calls for an apology, but the experience of Dr. C. Chapman of the advantages of repeated small doses of calomel over the usual dosage is worthy of attention. Fractional doses appear indicated in cases of gastro-intestinal catarrh, whether following upon exposure to cold or from improper feeding, where the stomach is intolerant alike of medicine and of food; a similar plan has also been of great service in adults with protracted vomiting, where the more obvious causes for the sickness have been eliminated and the only additional symptoms have been an independent pain in the hepatic region and an abnormally red tongue. In two illustrative cases quoted by Dr. Chapman, one a child of four years, the other a woman 54 years old, the symptoms were due to catarrh of the upper part of the alimentary tract associated with some hepatic congestion. To the child the following powders were prescribed: Calomel, one grain; sugar of milk, eight grains;—to be divided into ten powders, one to be placed on the tongue every fifteen minutes. To the adult the calomel was given in doses of one-sixth of a grain every twenty minutes until two grains had been taken. The earlier beneficial effects of the calomel is probably to be attributed to the germicidal and antiseptic properties of the mercury, as the stomach speedily became more tolerant of food, and the breath lost the odor suggestive of fermentation, before the liver could have been acted upon by the drug, though improvement was more marked after the

bowels had been acted upon. Gardiner has also exhibited calomel in a similar manner with gratifying results.

Most interesting is, however, the applicability of this mode of treatment in the later stages of heart disease, where long-standing valvular disease has by backward pressure caused the well-recognized visceral complications, amongst which may be noted congestion and catarrh of the alimentary tract consequent upon the chronically gorged state of the liver. It is obvious that digestion and and assimilation, being thus interfered with, not only does the general nutrition suffer, but the already enfeebled and dilated heart yields more and more. Dr. Chapman cites a case of heart failure in which, after all other medicines had failed, doses of one-sixth grain calomel every half hour, and nutrient enemata, restored the patient, apparently at the point of dissolution. Here relief of the portal congestion is probably the most important effect of the calomel; the right side of the heart, feeling first the lessening of the pressure, is able to do its work better; the hepatic cells resume to some extent their function; and the kidneys, sharing in the general relief of the tension, cause a decrease of the jaundice and lessoning of the œdema. The appetite returns in due course.

In hospital use chloralamid continues to elicit favorable expresssions of opinion in regard to its hypnotic qualities, especially in different forms of mental disturbances. Früs gives it in the form of an alcoholic mixture; Chloralamid 10 parts, alcohol 20 parts. syr. aurantii 30 parts, and water 100 parts: the dose for adults being as a rule one to two teaspoonfuls pro die. He has given it in 47 cases with satisfactory results, the action being prompt except in advanced cases of delirium tremens, in which it was without effect, as well as unreliable in the insomnia of males due to chronic alcoholism. Its administration is not attended with any injurious bye-effects upon the digestive organs, even after employment for months, and the heart's action is in no wise affected. The pulse and respiration, in the author's experience, remain quiet and regular under the hypnotic influence of the drug.

A novel employment for the new antiseptic, formalin, has been found by Dr. Hauser, of Erlangen, which indirectly demonstrates the extremely powerful and penetrating action of formic aldehyde, and, paradoxical as it may seem, relates to the preservation of bacteria. It is evident that in the teaching of bacteriology demonstrations of pure cultures of bacteria in gelatine and as plate cultivations are invaluable and almost indispensable aids. Mary authors have tried in this way to prepare and preserve cultures on different media with only partial success. The vapor of formalin, which contains about 40 per cent. formic aldehyde, have a most extraordinary disinfecting power, so that not only the surface is attacked but the development is checked and the micro-organisms killed in the deepest layers. Not only so, but in gelatine cultures by the continuous action of the formalin vapors the gelatine liquefied by the bacteria is again solidified without losing its characteristic appearance, so that in this manner Dr. Hauser has been able to preserve plates of cholera, anthrax, typhus, proteus, staphylococcus, sarceria, and other bacteria, retaining both their microscopical and macroscopical characters unaltered. The method is very simple, the vessels containing the cultures being simply covered with a piece of filter paper moistened with 10 to 15 drops of formalin and placed in a moist closed chamber, in which is also placed a procelain dish containing cotton-wool saturated with the disinfectant. It is important that only fresh formalin should be employed for this purpose, and that it has not been exposed in badly closed bottles.—*Notes on New Remedies.*

Hæmaturia.

Bloody urine alternating with clear urine is almost a positive sign that the region of the trouble is in the kidney, as this condition of things never exists in disease of the bladder. If the last of the urine shows clear blood, or appears to be most bloody, it locates the trouble in the bladder, the contractions forcing out the blood. In a case where the urethra is free from disease, blood showing mostly at the beginning of micturition proves the trouble to be located at the neck of the bladder.—*Annals of Gynecology and Pædiatry.*

Sodium Sulphate, in strong solution, introduced into the stomach through a tube, if the patient is unable to swallow is reported to be an efficacious antidote in cases of poisoning by carbolic acid.

THE LIBRARY TABLE.

BOOK REVIEWS.

Hospitals and Asylums of the World. Their origin, history, construction, administration, management, and legislation; with plans of the chief medical institutions. By Henry C. Burdett. In four volumes and a portfolio. London: J. & A. Churchill. Vols. III and IV.

These volumes conclude the most elaborate discussion of this subject that has ever been published. The author is especially well qualified for his work and has displayed remarkable energy and perseverence as well as rare judgment in treating his subject. He states in his preface that his work has cost him fourteen years of labor and a large sum of money and when the obstacles to be overcome are taken into consideration, his remark that it has been "a labor of love is entirely superfluous."

The first two volumes have already been noticed in the REPORTER. The third volume discusses the origin and history of hospitals, systems of hospital administration, revenue and expenditures, system of nursing, dispensaries and special forms of hospitals including military and naval. The discussion of the practical financial problems is elaborate and while referring more particularly to English institutions, is well worth study by all interested in the management of hospitals. It would be well if the conclusion he reaches as to the folly of narrow economy in hospital finance could be deeply impressed upon the managers of such institutions in this country as well as abroad. He notes that large hospital endowments are rarer in America than in Europe. Also that the income from pay patients is greater here than there. Elaborate tables give the average yearly expenditure per bed in various hospitals, and the great difference between hospitals in this respect is due to the peculiarities of individual institutions and the work done by them. In general, small hospitals expend more per head per annum than do large ones.

The chapter on the organization and management of nursing systems in connection with hospital work is excellent, though that part relating to the United States is too condensed. The discussion of the relation of hospitals and medical schools showing that the connection is of mutual benefit, is of great interest and importance. This relationship has never been sufficiently insisted upon in this country. We believe every hospital where charitable work is done should be a means of instruction and benefit easily accessible to medical students.

The fourth volume, together with a large portfolio of plans, is devoted to hospital construction and incidently to institutions intimately associated with hospital work. To expert hospital architects this part of the work is indispensible, and the information, while technical, can be easily understood by any intelligent person. The author insists that those charged with the responsibility of hospital construction should place the entire matter in the hands of an expert, thoroughly acquainted with the most recent deoɹəʌpments in hospital needs and administration, and not in the hands of those inexperienced in this particular branch, however expert in others. Neglect to follow this advice will invariably prove its wisdom though the demonstration be costly.

The volume includes types of the best modern hospitals and of them all the highest praise is given the Johns Hopkin's Hospital in Baltimore, which the author says "is by far the most complete and perfect set of buildings which have ever been erected for hospital use." The section on hospitals for infectious and contagious diseases, with the plans for such buildings, will be a Goloconda of information for municipal authorities in America at this immediate time.

The work is well printed on good paper and neatly and strongly bound, and since the edition is limited to 500 copies, those interested in this subject should secure the work without unnecessary delay.

The Ready-Reference Handbook of Diseases of the Skin. By George Thomas Jackson, M. D. With Fifty Illustrations. Philadelphia: Lea Brothers & Co. 1892.

This volume is intended to present the art of dermatology as it now exists. No attempt has been made to discuss debatable questions. Hence, pathology and etiology do not receive as full consideration as symptomatology, diagnosis, and treatment.

The alphabetical arrangement of the different diseases has been adopted for convenience of ready reference. The descriptions of various diseases are clear, lucid and careful.

Attention is called to the fact that in the prescriptions given no attempt has been made to translate grains, drachms, and ounces into their precise equivalents in grammes, but simply to preserve the relative percentages of the ingredients in the old formulæ and express them in decimals. The decimals may be regarded as either grammes or parts.

The work is divided into two parts with an appendix. Part I. comprising some 28 pages, is devoted to the Anatomy and Physiology of the Skin, Diagnosis, Therapeutic Notes, and Some Dermatological Dont's. Part II. The Diseases of the Skin and their Treatment. In the present state of our knowledge it is impossible to make a satisfactory classification of skin diseases. Many attemps have been made to do this, and are still being made. Nearly every systematic writer tries his hand at it with more or less indifferent success. Hebra's classification, modified, is found in a great many textbooks. The arrangement of this book does away with classification, with which the student need not burden his mind.

The Appendix contains 13 pages of formulæ, given as guides in the preparation of

prescriptions for the treatment of skin diseases. Many, if not all of them, have been tried by the author and their value proved.

Dunglison's New Pronouncing Medical Dictionary.

A new edition of Dunglison's Medical Dictionary is announced as in press for early publication. It has been thoroughly revised and greatly enlarged, and will contain about forty-four thousand new medical words and phrases. Pronunciation has been introduced into the new edition by means of a simple phonetic spelling. This work has always been noted for the fullness of its definitions, ample explanation being its distinguishing characteristic. In the new edition much encyclopœdic information, difficult of access elsewhere, will be found conveniently at hand. Especial attention has been devoted to matters of practical value. A review will appear in an early issue.

A New Medical Dictionary. A completely new Medical Dictionary is announced for early publication by Lea Brothers & Co.

The author, Dr. Alexander Duane, of New York, is already widely known as the medical expert for Webster's International Dictionary. His new work has been drafted to supply medical students with all desired information concerning the words they will meet in their course of reading, and as the vocabulary has been selected most liberally, the work will be of value to practitioners also. The pronunciation of each word is given by a simple and obvious phonetic spelling; then follows the derivation, an unexcelled aid to memory, and finally a full definition. Descriptive matter has been appended to such words as cannot be adequately explained by simple definition. Thus diseases are described, and their symptoms and treatment are given; drugs are followed by their properties, effects, doses, etc. Extensive tables of bacteria, doses, etc., are placed in the alphabet most conveniently for reference. A work of real value is promised, and we shall take an early opportunity of reviewing it in these columns.

The Review of Reviews

Seems to hold the most intimate relations with almost everything and everybody in all parts of the world. Its illustrations and its bits of summary discussion put its readers into harmonious acquaintanceship with nearly all that is worth remembering in the events and the discussion of the preceding month.

In this period of depression when a good many older periodicals have been hard beset, it is interesting to learn that the *Review of Reviews*, although comparatively so young, has won a position as impregnable as any other periodical that could be named in the United States, and that its circulation is not only solidly maintained, but steadily increasing through the intrinsic merits of the periodical. The *Review* has become a necessity to a large constituency; and whereas in times of financial depression many people give up their luxuries, there is always a steady market for the plain necessaries. Fortunately for the *Review of Reviews*, its readers consider it as a prime requisite rather than a causal luxury, and so its editions are not curtailed by the influence of current financial disasters.

Sharp & Dohme's Price List for 1893.

Special mention is made of Webber-pepsin, Ergotole, Pan-Peptic preparations and other special products. This will prove a convenient reference book for the profession to whom copies samples and literature will be sent upon application.

PERISCOPE.

MEDICINE.

Antidote for Carbolic Acid.

An Italian tailor swallowed by mistake thirty grammes of carbobic acid. Dr. Moreit, of Ancona, using a rubber catheter, immediately introduced by slow degrees into the patient's stomach a strong solution of sulphate of soda, which forms with corbolic acid a harmless mixture. In an hour's time the patient, who had een in a most critical condition, began to revive, Inhalations of ammonia were then used to hasten up the process, and little by little the poisoned man rallied so that an emetic, followed by a dose of lime-water, finished the cure.—*Med. Times.*

SURGERY.

Tape-worm the Cause of Rupture of the Intestine.

Dr. F. Dunlap (*New York Med. Jour.*, February 11, 1893) mentions a case of intestinal rupture occurring in a woman of thirty-one years of age, apparently caused by a tape-worm. When first seen the patient complained of violent pains in the left iliac region, followed in several hours by profound collapse. Rupture of an ectopic pregnancy was suspected, the suspicion being encouraged by the fact that menstruation had been absent for several months. A boggy mass was to be felt in the abdomen, and abdominal section was decided upon and performed. A

mass of clot was found in the pelvis, but the pelvic organs were found in a normal condition; nor could any aneurism, which had been thought of, be found. In flooding the cavity a long tape-worm was floated to the surface, and tracing it towards the head, it was found to protrude from a large, ragged rupture in the small intestine. It was fastened about twelve inches above the seat of rupture. Eight feet of the worm were removed from the peritoneal cavity, and about seventeen feet more were passed from the bowel afterwards as the result of an enema. From examination it appeared that there had existed no previous ulceration at the site of the rupture, the ragged gangrenous edges suggesting rather a pressure gangrene. The patient recovered.

OBSTETRICS.

Spontaneous Rupture of the Symphysis Pubis During Labor.

Oelschlager (*Centralbl. fur Gynakol*) has reported the case of a primipara, twenty years old, in which with the onset of labor pains two eclamptic attacks occurred in quick succession. The lower extremities were edematous, and the urine contained a small amount of albumin. The promontory of the sacrum could be touched with two fingers introduced into the vagina. The head was quite high in the pelvis and but slowly followed in the grasp of the forceps, a not excessive degree of traction being exercised. As the head began to rotate in the small pelvis a crack was distinctly heard. Examination disclosed a separation of 1.15 inches in the situation of the symphysis pubis, and the delivery of a living child weighing nine pounds was soon readily effected. On the day following the labor a leather support was applied to the hips. For two weeks the region of the symphysis was tender upon touch and painful upon movement, but a week later the woman was able to be up and about, although a slight degree of separation of the pubic bones persisted.

GYNECOLOGY.

Removal of a Lithopedion Thirty Years in the Body.

Gottschalk (*Centrallbatt f. Gynak., Med. Jour.*), exhibited before the German Obstetrical Society, in March, a lithopedion five pounds in weight, successfuly removed by abdominal section after it had been carried thirty years, causing more or less inconvenience to the patient at different times. The patient was 54, and had passed the menopause four years before. Her first pregnancy was thirty-three years ago, and the child lived. During the second and last, extra-uterine pregnancy was diagnosed. Towards term, violent pains set in, which ceased together with the fetal movements. Peritonitis ensued, and kept her several months in bed. Thenceforth she recovered gradually and was regular till the menopause. The indication for abdominal section was the appearance of severe symptoms of obstruction, especially in the direction of the bladder. The symptoms were clearly due to the impaction of a hard substance, the fetal skull, in the pelvic cavity. The uterus was pushed upwards and backwards against the sacrum, flattened by the fetus, which was as hard as a rock. The tumor reached as high as the umbilicus. The left Fallopian tube ran normally over it, and Gottschalk declares that the fetus, well-preserved, lay entirley within ovarian tissue. The sac-wall was clacified, the placenta still adhered to its inner surface.

NEWS AND MISCELLANY.

Announcement—College of Physicians of Philadelphia.

The William F. Jenks Memorial Prize. The Third Triennial Prize, of Five Hundred Dollars, under the Deed of Trust of Mrs. William F. Jenks, will be awarded to the author of the best essay on "Infant Mortality During Labor, and its Prevention"

The conditions annexed by the founder of this prize are, that the "prize or award must always be for some subject connected with Obstetrics, or the Diseases of Women, or the Diseases of Children;" and that "the Trustees, under this deed for the time being, can, in their discretion, publish the successful essay, or any paper written upon any subject for which they may offer a reward, provided the income in their hands may, in their judgment, be sufficient for that purpose, and the essay or paper be considered by them worthy of publication. If published, the distribution of said essay shall be entirely under the control of said Trustees. In case they do not publish the said essay or paper, it shall be the property of the College of Physicians of Philadelphia."

The prize is open for competition to the whole world, but the essay must be the production of a single person.

The essay, which must be written in the English language, or if in a foreign language, accompanied by an English translation, should be sent to the College of Physicians of Philadelphia, Pennsylvania, U.S.A., before January 1, 1895, addressed to Horace Y. Evans, M. D., Chairman of the William F. Jenks Prize Committee.

Each essay must be typewritten, distinguished by a motto, and accompanied by a sealed envelope bearing the same motto and containing the name and address of the writer. No envelope will be opened except that which accompanies the successful essay.

The Committee will return the unsuccessful essays if reclaimed by their respective writers, or their agents, within one year.

The Committee reserves the right not to make an award if no essay submitted is considered worthy of the prize.

JAMES V. INGHAM,
Secretary of the Trustees.

An Army Medical Board

Will meet at Washington City, D. C., October 2nd, 1893, for the examination of candidates for appointment to the Medical Corps of the United States Army, to fill existing vacancies.

Persons desiring to present themselves for examination by the Board will make application to the Secretary of War, before September 15th, 1893, for the necessary invitation, stating the date and place of birth, the place and State of permanent residence, the fact of American citizenship, the name of the medical college from whence they were graduated, and a record of service in hospital, if any, from the authorities thereof. The application should be accompanied by certificates based on personal knowledge, from at least two physicians of repute, as to professional standing, character, and moral habits. The candidate must be between 22 and 28 years of age, and a graduate from a Regular Medical College, as evidence of which, his Diploma must be submitted to the Board.

Further information regarding the examinations may be obtained by addressing the Surgeon General U. S. Army, Washington, D. C.

GEO. M. STERNBERG,
Surgeon General U. S. Army.

CIRCULAR OF INFORMATION

FOR CANDIDATES SEEKING APPOINTMENT IN THE MEDICAL CORPS OF THE UNITED STATES ARMY.

The Medical Corps of the Army consists of a Surgeon General with the rank of brigadier general, six Assistant Surgeons General with the rank of colonel, ten Deputy Surgeons General with the rank of lieutenant colonel, fifty Surgeons with the rank of major, and one hundred and twenty-five Assistant Surgeons with the rank of 1st lieutenant, mounted, for the first five years and the rank of captain, mounted, thereafter until promoted to major. Promotion through the intermediate grades of rank from that of captain to that of colonel is by seniority, but there is an examination for the rank of captain and another for that of major, to ascertain the fitness of the officer for promotion. Advancement to lieutenant colonel and colonel takes place without further examination. The Surgeon General is selected by the President from among the members of the corps. All vacancies are filled by appointment to the junior grade.

PAY AND EMOLUMENTS.

To each rank is attached a fixed annual salary, which is received in monthly payments, and this is increased by ten per cent. for each period of five years' service until a maximum of forty per cent. is reached. An Assistant Surgeon with the rank of 1st lieutenant, mounted, receives $1,600 per annum, or $133.33 monthly. At the end of five years he is promoted to captain and receives $2,000 a year, which, with the increase of ten per cent. for five years' service, is $2,200, or $183.33 per month. After ten years' service he receives $2,400, after fifteen years $2,600, and if he remains a captain after twenty years, $2,800 per year. The pay attached to the rank of major is $2,500 a year, which, with ten per cent. added for each five years' service, becomes $3,250 after fifteen years and $3,500 after twenty years. The monthly pay of lieutenant colonel, colonel, and brigadier general is $333.33, $375, and $458,33 respectively. Officers in addition to their pay proper are furnished with a liberal allowance of quarters according to rank, either in kind, or, when no suitable Government building is available, by commutation. When traveling on duty an officer receives four cents per mile and reimbursement of money actually expended for railroad or other fares. On change of station he is entitled to transportation for professional books and papers and a reasonable amount of baggage at Government expense. Mounted officers, including all officers of the Medical Corps, are provided with forage, stabling, and transportation for horses owned and actually kept by them, not exceeding two for all ranks below a brigadier. Groceries and other articles may be purchased from the Commissary and fuel from the Quartermaster's Department at about wholesale cost price. Books and instruments are supplied in abundance for the use of medical officers in the performance of their duties.

ARMY MEDICAL SCHOOL.

By a recent order the Secretary of War has authorized the establishment of an Army Medical School in the city of Washington for the purpose of instructing approved candidates for admission to the Medical Corps of the Army in their duties as medical officers.

The course of instruction will be for four months, and will be given annually at the Army Medical Museum, in Washington City, commencing on the 1st day of November.

Four professors will be selected from among the senior medical officers of the Army stationed in or near the city of Washington, and as many associate professors as may be required to give practical laboratory instruction in the methods of sanitary analyses microscopical technique, clinical microscopy, bacteriology, urine analysis, etc.

The faculty of the Army Medical School will consist of—

1. A *President of the Faculty*, who shall be responsible for the discipline of the school, and who will deliver a course of lectures upon the duties of the medical officers in war and peace (including property responsibility, examination of recruits, certificates of disability, reports, rights and privileges, customs of service, etc.).

2. A *Professor of Military Surgery* (including the care and transportation of wounded).

3. A *Professor of Military Hygiene* (including practical instruction in the examination of air, water, food, and clothing from a sanitary point of view).

4. A *Professor of Clinical and Sanitary Microscopy* (including bacteriology and urinology).

DUTIES AND PRIVILEGES.

A medical officer after completing the course of instruction at the Army Medical School will be assigned for some months as junior at a large military post in order that he may become acquainted with Army regulations, and making of official reports, and other matters necessarily new to him, before he is thrown upon his own responsibility. His stations after that are likely to alternate between the frontier and more desirable points, a tour of duty being usually four years at one place. Leave of absence on full pay is allowed at the rate of one month per year, and this when not taken may accumulate to a maximum of four months, which at the end of four years is then available as one continuous leave. Beyond this an officer may still be absent with permission on half pay.

It is the intention of the Surgeon General to recommend the assignment for duty, as attending surgeons in the principal medical centers of the United States, of medical officers who have not yet passed their examinations for promotion to a majority and, so far as may be practicable, in the order of their seniority. These details will be made for one year only, in order that as many medical officers as possible may be enabled to avail themselves of the opportunities thus offered to become familiar with the practice of the leading physicians and surgeons in this country, and of attending medical lectures, meetings of medical societies, etc. At the end of this tour of duty medical officers will be required to make a detailed report to the Surgeon General showing how much of their time has been occupied by their official duties and to what extent they have availed themselves of the advantages offered for professional advancement.

Absence from duty on account of sickness involves no loss of pay. Medical officers are entitled to the privilege of retirement at any time for disability incurred in the line of duty or after forty years' service. On attaining the age of sixty-four they are placed upon the retired list by virtue of statutory provision. Retired officers receive three-fourths the amount of their pay proper at the time of retirement.

EXAMINATION AND APPOINTMENT.

Appointments to the Medical Corps of the Army are made by the President after the applicant has passed a successful examination before the Army Medical Examining Board and has been recommended by the Surgeon General. The board usually meets twice a year, about April and October, of which due notice is given by advertisement. Permission to appear before the board is obtained by letter to the Secretary of War, which must be in the handwriting of the applicant, giving the date and place of his birth and the place and State of which he is a permanent resident, and inclosing certificates based on personal acquaintance from at least two reputable persons as to his citizenship, character, and habits. The candidate must be a citizen of the United States, between twenty-two and twenty-eight years old, of sound health and good character, and a graduate of some regular medical college, in evidence of which his diploma will be submitted to the board. The scope of the examination will include the morals, habits, physical and mental qualifications of the candidate, and his general aptitude for service; and the board will report unfavorably should it have a reasonable doubt of his efficiency in any of these particulars.

The physical examination comes first in order, and must be thorough. Each candidate will in addition be required to certify "that he labors under no mental or physical infirmity or disability of any kind which can in any way interfere with the most efficient discharge of any duty which may be required." Errors of refraction when not excessive, and not accompanied by ocular disease, and when correctible by appropriate glasses, are not causes for rejection.

The mental examinations are conducted by both written and oral questions, to which written and oral answers are required upon—

I. Elementary branches of common school education, including English grammar, arithmetic, the history and geography of the United States, natural philosophy, the principles of Latin grammar, and upon general literature and ancient and modern history. Candidates claiming especial knowledge of the higher mathematics, ancient or modern languages, drawing, analytic chemistry or other branches of natural science, will be examined in those matters as accomplishments and will receive due credit therefore according to their proficiency.

II. Professional branches, including anatomy, physiology, chemistry, hygiene, pathology and bacteriology, therapeutics and materia medica, surgery, practice of medicine, obstetrics and the diseases of women and children.

Examinations at the bedside will also be conducted in clinical medicine and surgery, and operations and demonstrations upon the cadaver.

Hospital training and practical experience in the practice of medicine, surgery, and obstetrics are of great importance to candidates seeking admission to the Medical Corps of the Army, and they will be fully appreciated and duly credited to those who have had such advantages.

The board has discretion to deviate in such manner as it deems best from this general plan of examination when necessary for the interests of the service.

To save unnecessary expense to candidates, those who desire it may have a preliminary physical examination and a mental examination in the "elementary branches of a common school education," by a medical officer of the Army stationed most conveniently for this purpose, who will act under instructions from the Medical Examining Board.

The merits of the candidates in each of the several branches, and also their relative merit as evinced by the results obtained from the entire examination, will be reported by the board, and in accordance with this re-

port approved candidates will be appointed to existing vacancies or to such as may occur within two years thereafter. An applicant failing in one examination may be allowed a second after one year, but not a third. No concession vill be made for the expenses of persons undergoing examination, but those who receive appointments will be entitled to travel allowances in obeying the first order assigning them to duty.

There are at present six vacancies in the corps to be filled.

GEO. M. STERNBERG,
Surgeon General.

Approved:
DANIEL S. LAMOT,
Secretary of War.

War Department,
Surgeon General's Office,
Washington, D. C., June 30, 1893.

For Pediculosis Capitis

℞ Olei Staphisagriæ ..... ʒj.
Olei Limonis..... ʒj.
Olei Amygdalae ad ..... ʒiv.
Misce et fiat applicatio.
To be applied to the affected parts daily.

ARMY AND NAVY.

U. S. ARMY FROM AUGUST 20, 1893, TO AUGUST 26, 1893.

By direction of the Secretary of War, a board of medical officers to consist of: Col. Charles H. Alden, assistant surgeon general; Lieut. Col. Wm. H. Forwood, deputy surgeon general; Major Chas. Smant, surgeon; Captain Walter Reed, assistant surgeon and Captain James C. Merrill, assistant, is constituted to meet at the Army Medical Museum Building, in this city on the 11th day of September, 1893, for the examination of candidates for admission to the Medical Corps of the Army.

Par. S. O. 93 Hdgrs. of the Army, A. G. O., Washington, Aug. 23rd, 1893.

By direction of the Secretary of War the following-named medical officers are detailed to represent the Medical Department of the Army at the Pan-American Medical Congress, to be held in Washington, D. C., September 5th to 8th, 1893. Colonel B. J. D. Irwin, assistant surgeon general; Lieut. Colonel Dallas Bache, deputy surgeon general; Major David L. Huntington, surgeon; Major Charles Smant, surgeon.

Board of officers to consist of: Colonel Charles H. Alden, assistant sugeon general; Lieut. Col. Wm. H. Forwood, deputy surgeon general; Major Joseph K. Corson, surgeon, is by direction of the Secretary of War, appointed to meet at the Army Medical Museum Building, Washington, D. C., Monday, September 4th, 1893, for the examination of such officers as may be ordered before it, to determine their fitness for promotion.

Lieut. Col. Wm. D. Wolverton, deputy surgeon general, is relieved from duty at Waterolict Arsenal, N. Y., and assigned to duty as medical director, Department of the Columbia, to relieve Lieut. Col. C. C. Byrne, deputy surgeon general, U. S. Army.

Lieut. Col. C. C. Byrne, deputy surgeon general, on being relieved from duty as medical director, Department of the Columbia, will report for duty as medical director, Department of Dakota, to relieve Colonel Charles H. Alden, assistant surgeon general.

Colonel Charles H. Alden, assistant surgeon general, on being relieved from duty as medical director, Department of Dakota, will proceed to this city and report to the Surgeon General U. S. Army, for duty in his office, and as president of the Army Medical School, Washington, D. C.

Leave of absence for one month, with permission to apply for an extension of ten (10) days, is hereby granted to Captain J. L. Powell, assistant surgeon U. S. Army.

By direction of the Secretary of War the following named officers will report in person to Colonel C. H. Alden, assistant surgeon general, president of the examining board appointed to meet at the Army Medical Museum Building, September 4th, 1893, for examination for promotion: Captain Curtis E. Price, assistant surgeon; Captain E. T. Comegys, assistant surgeon; Captain Walter Reed, assistant surgeon; Captain James C. Merrill, assistant surgeon.

Leave of absence for one month, to take effect upon the return of Assistant Surgeon Glennan from leave, is granted Captain Wm. F. Carter, assistant surgeon.

Major Justus M. Brown, surgeon, is relieved from duty at Fort Meade, South Dakota, and assigned to duty at Fort Wayne, Michigan.

Leave of absence for one month, to take effect about September 1st, 1893, is granted Captain Paul Shillock, assistant surgeon, (in the field) with permission to apply for an extension of fifteen days.

The commanding officer U. S. Troops in the field near Fruitland, N. M., is authorized to employ a citizen physician in cases of necessity during absence of Captain Paul Shillock, assistant surgeon.

Leave of absence for one month is granted Captain R. J. Gibson, assistant surgeon U. S. Army.